

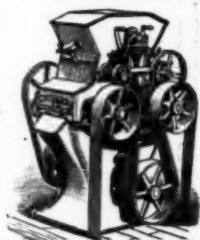


VOL. 8. No. 18.  
WEEKLY.

BALTIMORE, DECEMBER 12, 1885.

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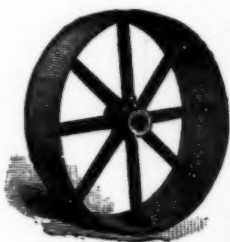
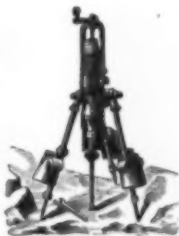
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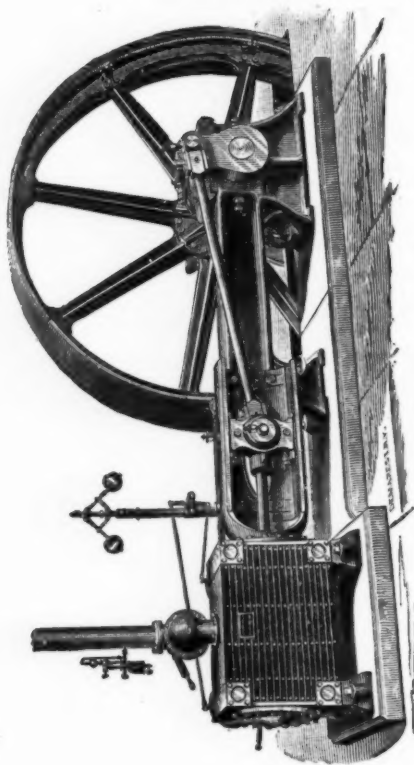
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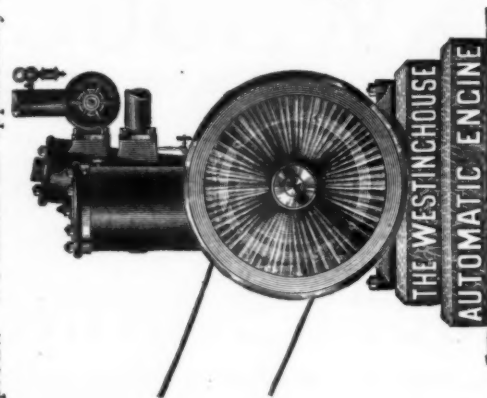
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RING SPINNING FRAMES, 2, 1¼, 1½ AND 1½ INCH RINGS.

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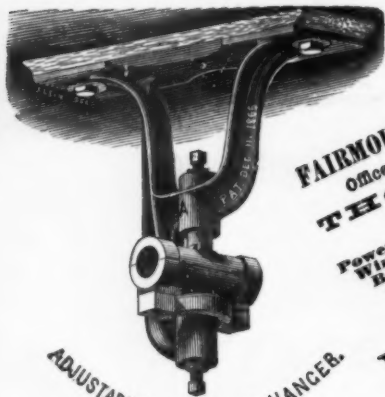
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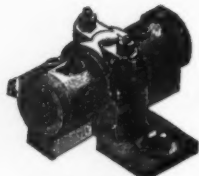
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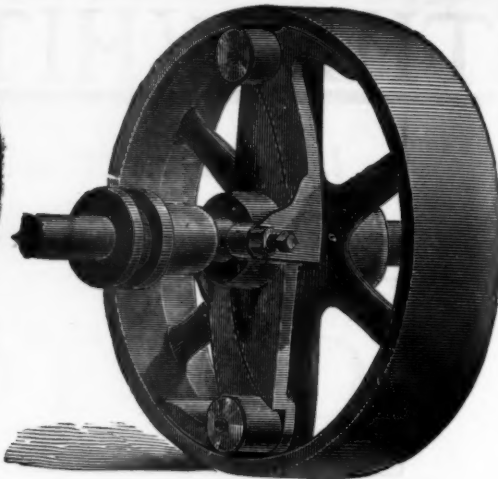
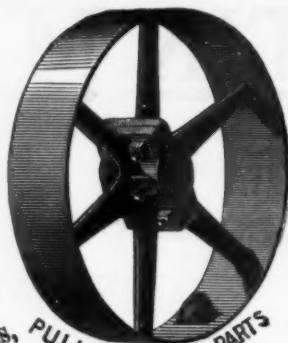
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Ball and Socket  
Self-Oiling Pillow Block.DOUBLE-BRACED ADJUSTABLE  
SELF OILING HANGER.Adjustable Self-Oiling  
Post Hanger.  
6 inches from post to  
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**THOMAS WOOD,**  
Manufacture as Specialties  
Power Looms, Patent Hobbin or Quill  
Winding Machines, Plain and Presser  
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or Spooling Machines, Sizing,  
Warp Spinning, Fulling and Cal-  
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**WARPING MILLS,**  
16, 18 and 20 yards Circumference,  
WITH IMPROVED HECKS,  
**SHAFTING,**  
With Patent  
ADJUSTABLE SELF-OILING HANGERS,  
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Also WALL, POST AND GIRDER HANGERS.  
Pulleys, from 4 inches to 10 feet in diameter.  
**PATENT FRICTION PULLEY.**  
Pulleys in two parts, any size required.  
**PATENT HOISTING MACHINES.**  
Oil Presses for Lard, Fish and Paraffine.

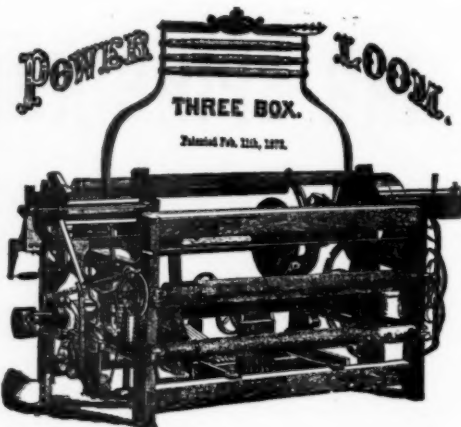
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Suitable for any kind of driving, they  
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**PULLEYS from 4 inches to 10 feet in diameter.**

Why use old style Bearings, that require oiling  
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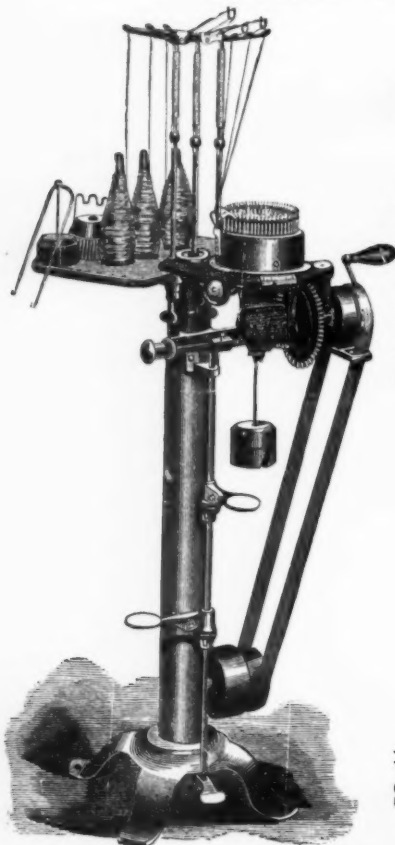
### New AUTOMATIC CIRCULAR RIB KNITTING MACHINE

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For Knitting Ribbed Tops for Socks, Shirt Cuffs,  
and Drawer Bottoms.

This machine will produce from twenty-five to thirty dozen pairs of Cuffs in ten hours, making the WELT and LOOSE COARSE AUTOMATICALLY. The Needle Cylinder and Dial are made of FORGED CAST STEEL, and everything about the machine is built in the most THOROUGH and WORKMANLIKE manner, with the view of having them run the longest possible time without repairs. They are complete within themselves. We make them any number of ribs desired.

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IS THE ONLY  
MACHINE**



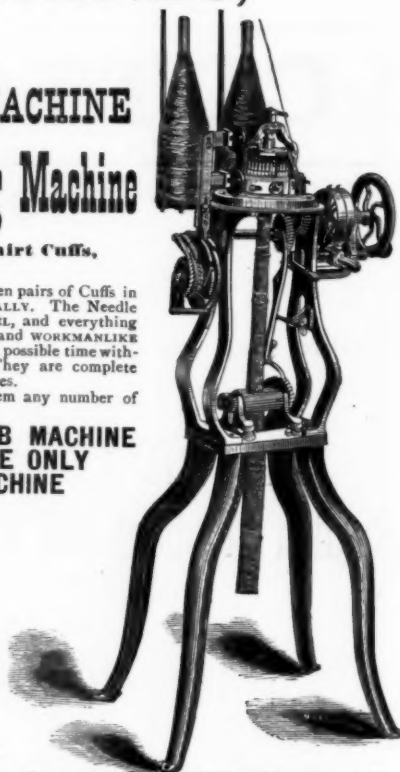
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Send for Full Particulars of  
the Above Machines to



That knits hosiery or tubular work of all sizes.  
That narrows and widens on hosiery or tubular work.  
That knits a regular, right-angle heel, such as is knit by hand.  
That narrows off the toe.  
That knits a sock or stocking complete.  
That knits mittens and gloves of any size without a seam.  
That forms genuine Ribbed or Seamed work.  
That knits the Double, Flat, or Fancy Webs.  
That knits an elastic seam-stitch Suspender with button holes.  
That knits the Afghan stitch, Cardigan Jacket stitch, Fancy Ribbed stitch, the Raised Plaid stitch, the Nubia stitch, Shell stitch, Unique stitch, Tidy stitch, &c., &c.

It is now the Standard Machine for manufacturing all lengths of needle beds, from 8 inches by 60 inches, and cuts from four needles to the inch to ten to the inch. More of these machines have been made and sold than all others combined.



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**CIRCULAR RIB KNITTING MACHINE,**  
For Knitting Ribbed Tops, for Socks, Shirt Cuffs  
and Drawer Bottoms.

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MILL ENGINEERS.

GREAT SUCCESS OF OUR

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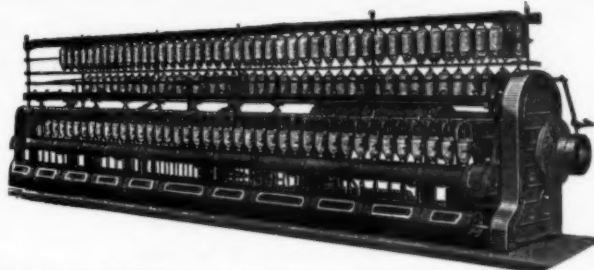
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10,000 DELIVERY HEADS OF DRAWING, AND  
71,000 INTERMEDIATE ROVING SPINDLES.

The quality of Sliver produced by our Frames surpasses all others, and Waste, Single and Roller Laps are prevented, and production increased.

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**SLUBBING AND ROVING FRAMES WITH LATEST AND BEST IMPROVEMENTS.**

SPECIALTIES:

EXHAUST OPENERS, LAPPERS, (LORD'S EVENERS), IMPROVED ROLLER CARDS, PRODUCE MORE AND MAKE LESS WASTE THAN ANY OTHER.

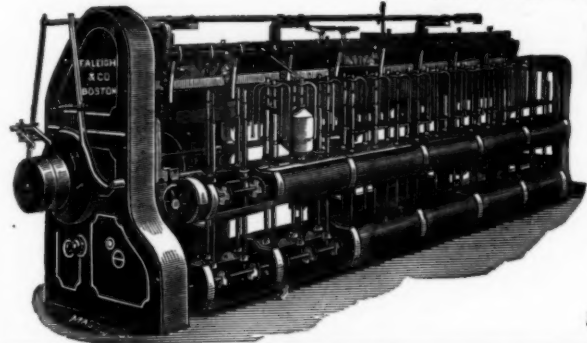
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800 CYLINDER SLASHERS Now at work in America alone

Patent and plain Spindle, Spinning and Twisting Frames, Spoolers, Reels and Circular Warpings, Cloth Folders, Size Kettles plain and Fancy Looms, Spindles, Flyers and Fluted Rolls.

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Openers, \* Lappers, \* Cards, \* Drawing,  
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*Made PERFECTLY Straight and any Length without Joints.**For Main Driving it is the Best. Much Cheaper Than Leather.*

MANUFACTURED BY

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Are the Latest and Most Improved Machines that were ever designed for the work required of them. They are the Most Simple, Economical and Effective now known, and will satisfy all Purchasers.

Boilers, Steam Pumps, Hoisting Engines, Pipe and Fittings, Electric

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Complete Specifications for Rock Drilling and Mining Plants Furnished on Application.

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WHITINSVILLE, MASS., U. S. A.

SUPERIOR WORKMANSHIP.

NOT EXCELLED IN DURABILITY.

EVERY RING WARRANTED.



The Simplest and Best Method of Adjusting Rings.



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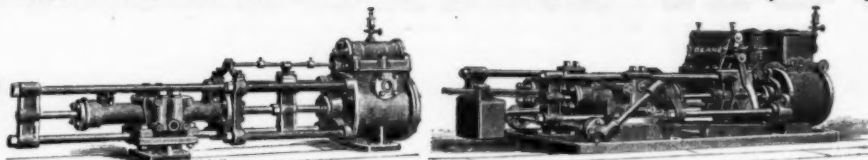
Builders of STEAM AND POWER PUMPING MACHINERY of Every Variety.

Hydraulic Pressure

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A Specialty.

SINGLE OR DUPLEX PATTERN.



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240,000 Pounds of RACKAROCK.

Safer than any other High Explosive.

Stronger than No. 1 Dynamite, and Cheaper.

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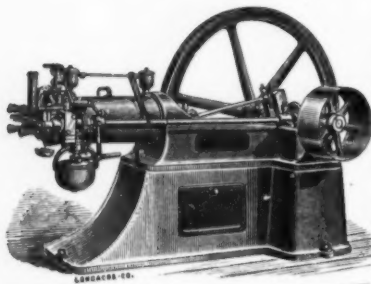
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Every Hole for the great blast at FLOOD  
ROCK was drilled with the

**RAND DRILLS.**

**RAND DRILL CO.**

23 PARK PLACE, N. Y.



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20 to 70 per ct. less Gas  
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ANY other ENGINE.

Working Without Boiler, Steam, Coal, Ashes or Attendance.

Started instantly by a Match, it gives full power immediately. When stopped, all expense ceases.

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UNSURPASSED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &c. Sizes: 1 to 25-horse power.

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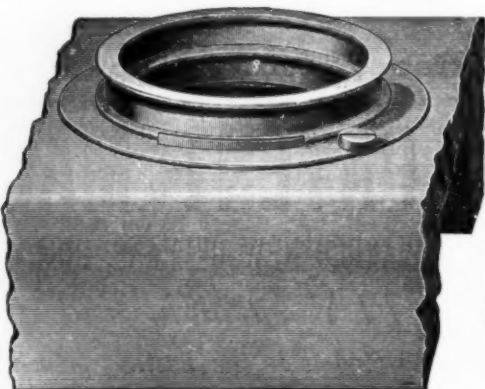
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DOUBLE ADJUSTABLE

## Spinning Rings.

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HOPEDALE, MASS.

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Number of Rings sold.	Number of Rings sold for repairs.
1869..... 6,025.....	
1870..... 20,258.....	
1871..... 38,648.....	
1872..... 94,264.....	12
1873..... 117,301.....	
1874..... 168,382.....	500
1875..... 223,924.....	963
1876..... 185,319.....	947
1877..... 270,811.....	946
1878..... 215,214.....	3,309
1879..... 336,918.....	8,007
1880..... 367,860.....	11,264
1881..... 659,730.....	8,974
1882..... 636,715.....	22,515
1883..... 416,500.....	21,689
1884..... 319,869.....	25,105
1885, 9 mos. 212,056.....	22,373
Total num-ber sold..... 4,489,794	126,604
Total number in use 1,363,190.	

The great durability of our Rings is shown by the fact that we have more rings in use over twelve years old than all we have sold for repairs.

This statement shows unmistakably that a mill once supplied with our rings need think but little of the cost of repairs. As the number sold for repairs is an average of about twenty per cent. of the number sold the tenth year before, the average life of our rings will be at least twelve years.

Do not make the mistake of ordering new frames without specifying Double and Adjustable Rings. While they cost more to begin with, they are much the cheapest in the end, on account of their uniform excellent quality and unparalleled durability.

As an encouragement to use none but the best of Rings, we reduced the price on and after the first day of January, 1885, of those 1 1/2 inches or less in diameter, without holders and screws, to be used only to take the place of our rings worn out, to 12 cents each.

## Washburn & Moen Manufacturing Co., Worcester, Mass.

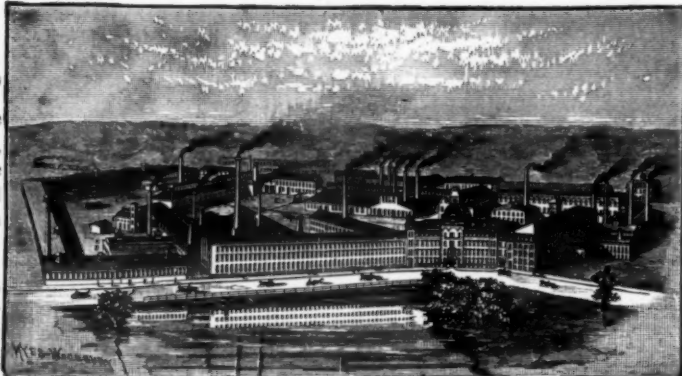
Wire Drawers, and Manufacturers of Iron and Steel Wire of Every Description.



Iron and Steel Telegraph  
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Patent Steel Wire Bale  
Ties, Pump Chains,  
Chain Wire, Steel Wire  
for Springs, Needles and  
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Springs.

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Specialties.



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GLIDDEN PATENT

STEEL BARB WIRE.



The Best Fence Material in Use.

For Sale by Special Agents and Hardware

Proof against Fire, Wind and Flood.

Dealers in all Parts of the United States.

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# BALTIMORE Manufacturers' Record.

Published Every Saturday by  
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E. H. Edmonds. J. W. Bigsby. Wm. E. Edmonds.

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For advertising on outside pages add 50 per cent. to  
the above rates.  
Reading Notices 50 cents per line each insertion.

BALTIMORE, DECEMBER 12, 1885.

## Our New Heading.

The readers of the MANUFACTURERS' RECORD will, we are sure, be pleased with its new heading. It symbolizes the interests represented by the paper without attempting to convey too much in the way of detail, as did the old one. The prominent phases of Southern development are typified. Our old friend Vulcan is still at his post as the representative of the iron interests, while the chaste Penelope and her loom continue to set forth the textile industry. Manufactures are represented in the fly wheel, the governor, the cog-wheel, &c., and in the iron piping; the timber interests find expression in the oak branch, and the cotton plant with its bursting bolls represents the South's great staple. The name stands out more clearly than in the old heading, and the general effect is better. The artist has produced a tasty and handsome design, and the engraver's work has been splendidly executed.

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more.

## Mortality in the South.

By many unacquainted with the facts, the South is looked upon as an unhealthy country, except in some few sections which have attracted attention as health resorts. That the death-rate in the South, notwithstanding the high rate of mortality among the negroes, partly on account of their manner of living, is much lower than in the North, is a fact which is doubtless known to very few people. Let us take the rate of mortality in leading Northern and Southern States, and compare them in order to form a correct idea of the salubrity of the South. The total deaths in proportion to population are as follows:

Massachusetts.....	18.50
New York.....	17.38
Rhode Island.....	17.00
District of Columbia.....	23.60
New Jersey.....	16.33

Now let us compare with these five Northern States, five Southern States.

Georgia.....	13.97
Florida.....	11.72
Mississippi.....	12.89
Alabama.....	14.20
North Carolina.....	14.39

The comparison is very favorable to the South. It must be held in mind that we give the rate of deaths in proportion to population. In other words, the death-rate in every one of the Northern States mentioned is greater than in the Southern States mentioned. This was the case in 1880, according to the census of that year. It may not prove uninteresting to show how these States stood in 1870:

Massachusetts.....	17.74
New York.....	15.77
Rhode Island.....	12.61
District of Columbia.....	13.30
New Jersey.....	11.68

Georgia.....	11.49
Florida.....	12.06
Mississippi.....	11.08
Alabama.....	10.80
North Carolina.....	9.88

From these figures it will be seen that the healthfulness of the South is a regular thing and not an accident. It is a question of a healthful country, always healthful, and therefore the country for the immigrant seeking a place of entire salubrity. Almost the same results are shown in the year 1860. The earliest census returns of mortality were printed in 1855. Now let us take the statistics of mortality in these States among children under one year of age in 100 born:

Massachusetts.....	17.05
New York.....	15.70
Rhode Island.....	13.32
District of Columbia.....	23.52
New Jersey.....	13.93

Georgia.....	9.65
Florida.....	6.63
Mississippi.....	7.99
Alabama.....	9.41
North Carolina.....	10.03

Let us now compare these American figures of mortality among children with similar figures of foreign mortality:

Russia.....	26.54
Austria.....	24.99
Italy.....	22.50
England.....	15.28

In the United States the average mortality per 1,000 is 18.0 against 20.5 in England, 26.1 in Germany, 23.6 in France, 29.6 in Austria and 30.5 in Italy. The lesson of all this is that the United States is the healthiest country in the world, and of the United States the healthiest part is the South. In making an estimate

of the healthfulness of the South we must consider the greater mortality of the colored people than the whites, and thus reduce the average of white mortality to that extent. In the Southern States mentioned the rates of white and colored mortality are as follows:

	WHITE.	COLOR.
Georgia.....	8.21	11.17
Florida.....	5.98	7.33
Mississippi.....	6.97	8.70
Alabama.....	7.64	11.30
North Carolina.....	8.87	11.74

Let us now take another test of this important matter. We will take the deaths in proportion to each 1,000 births in each of these States:

Massachusetts.....	239.7
New York.....	225.6
Rhode Island.....	195.6
District of Columbia.....	304.1
New Jersey.....	187.4

Georgia.....	144.2
Florida.....	99.4
Mississippi.....	116.3
Alabama.....	146.3
North Carolina.....	157.9

These comparisons of mortality are very significant and show a very striking superiority of healthfulness in the five representative Southern States over five representative Northern States.

## An Attractive Town.

In proportion to population there are very few towns in the South that have displayed more enterprise lately than Spartanburg, S. C. Its growth has been satisfactory, and its future appears to be very promising. Its location is good from whatever point of view looked at; it is good for health, good for trade, and good for manufactures of some kinds; and its transportation facilities are rarely equalled in a place of its size. It is located in the upper Piedmont region of South Carolina, 222 miles above Charleston, and 90 miles above Columbia, its altitude being 787 feet above the sea level. The winters are short and comparatively mild, and the summers far less disagreeably hot than in Northern cities. Dr. M. G. Ellzey, professor of chemistry in the University of Georgetown, D. C., in an address before the Virginia Medical Society, said: \* \* \* From Aiken northward, through Greenville, Spartanburg, and as far as Morgantown, are found the driest and most equable of American climates east of the Mississippi. In this region is located the celebrated "thermal belt," the best of all known winter climates for rheumatics and consumptives.

Spartanburg has a population of about 4,000—a large increase since 1880. It is quite an important railroad center, and its business men are wise enough to be actively at work to secure the building of still more railroads. There are now four railroads reaching the town—the Atlanta & Charlotte Air Line, a part of the Richmond & Danville's great system, passes through Spartanburg; the Asheville & Spartanburg, running from Spartanburg to Hendersonville, and soon to reach Asheville, has its headquarters here; the Greenwood, Laurens & Spartanburg is a new narrow-gauge road 134 miles long, laid with steel rails, almost a perfect air line

connecting Spartanburg and Augusta, Ga.; while the Spartanburg & Union Road connects Spartanburg and Columbia, S. C. Thus the town is already well provided with railroads, but a movement is now on foot to build still another.

The amount of cotton handled in this city reaches about 30,000 bales annually. There are four cotton mills that, while not located within the town, are adjacent to it, which help to swell the volume of trade and increase the prosperity of Spartanburg. It is the trading point for a large and prosperous section of country, and does a very extensive business. Country wagons of all kinds, ox carts, mule carts, horse carts, and a varied assortment of carts in general, crowd the public square, bringing in all kinds of country produce, many of them coming from 30, 40 and even 50 miles, and returning with dry goods, groceries and general family and farm supplies.

The general business of the town appears to be prosperous, and the many advantages possessed by the place, surrounded as it is by a most excellent farming country, capable of producing fine crops, ought to insure a steady and permanent growth. It is a place of considerable wealth, having fine church and school facilities. The hotel accommodations are good, and especially so for a town of 4,000 inhabitants. There are several hotels, the principal one being the Merchants', a 3-story brick building, covering nearly a square of ground, of which Mr. J. Watkins Lee is proprietor. It is a well-kept house, and is very deservedly popular with the travelling public. It is, by the way, an attractive stopping place for many Northern visitors to the South.

OUR Birmingham correspondent makes a pertinent and timely suggestion in this week's letter, in reference to the importance of concerted action in the South on the tariff question. In view of the threatened tinkering with the tariff during the present session of Congress, it is urgently important that the friends of protection in the South should combine to resist the attacks of free-trade advocates, and make known to Southern congressmen the position of the South in this matter in a way not to be misunderstood. The rapid growth in protection sentiment in the South within the last few years is not fully appreciated, and its extent is apt to be underestimated. The necessity to the South of the maintenance of a protective tariff, and the interests to be affected by a meddling with the present tariff, are too vast to be neglected. Some public, general combined effort is needed.

ADVERTISERS wishing to reach the manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the BALTIMORE MANUFACTURERS' RECORD. We are always prepared to furnish proof of our claims as to circulation.



## Petroleum in the South.

### Some Features of Southern Agriculture—Necessity of Combined Effort Against Tariff Reduction—The Iron Situation.

[Special correspondence BALTIMORE MANUFACTURERS' RECORD.]

BIRMINGHAM, ALA., Dec. 7, 1885.

Readers of the MANUFACTURERS' RECORD will not have failed to notice the growing tendency to discuss the question of the future petroleum supply on the part of scientists and oil operators alike. It is not necessary to my present purpose to consider the matter, which is by no means a small one, in all its details. I apprehend that there is practical agreement among the *cognoscenti* that the available oil area of New York and Pennsylvania is known, and that what it contains is also understood well enough to decide that a large portion—some authorities think quite half—of all the oil in those wonderful basins has been exhausted. It is only a question of time, then, when the last barrel will be pumped out and the petroleum fields be deserted. Probably the time is not close at hand, but reports all concur that the expense of oil production is steadily increasing, as against a supply which is said to be diminishing with equal steadiness. At all events the day of exhaustion appears imminent enough to set many wise Eastern pens to wagging; and the consequent agitation interests me a great deal, principally because, in all that is being written on the subject, I fail to see any evidence of even a suspicion that the New South may possibly have a hand in the solution of the problem whenever it becomes a vital one.

The oil resources of Pennsylvania and the neighboring district over the New York boundary have proven so vast that the attention of both skill and capital has been diverted from other fields presenting in some instances most promising indications. While the producing power of territory that has so far turned out 261,000,000 barrels seemed to be unimpaired, the "oil excitements" which have occurred in a number of Southern localities have made but the smallest impression upon the minds of people interested in the commodity; though this rule has had at least one exception, and one which may be of future importance. Several States in this section afford evidence of the presence of oil in varying quantities. Western Tennessee, for example, has developed some wells of more than small capacity. Overton county especially had three flowing wells a few years ago, which, according to a common report, were purchased and plugged by the Standard Oil Company. In other parts of the same State there is still some production of lubricating oil in a limited way; but what Tennessee's oil resources may amount to in the aggregate is probably a question for careful exploitation to decide in the future. In Eastern Kentucky, where the geological conditions are understood to be analogous to those which obtain in the Pennsylvania oil-field, there is still better reason to expect oil developments. At a number of places along the line of the Kentucky Union Railway so-called oil springs may be found, and one of these has a flow sufficient to provide the country people for miles around with lubricating oil. Within 50 miles of the same point there is a producing well in what is called the Big Sandy country, and there are many other indications of value. I think it safe to assume that the existence of a rich oil region in Eastern Kentucky has appeared to first-class technical authorities as something more tangible than a mere probability, and that a certain gigantic Eastern corporation is nursing its private information on the subject for use when the proper time shall come. I am led to this suspicion by the fact, within my

personal knowledge, that charters for pipe lines in and through Eastern Kentucky were obtained in the interest of that corporation at the last session of the Kentucky legislature. If there be anything in this, it is of great importance to the outsiders, some of whom might like to get in and pick up territory before it has all been absorbed by the octopus of the trade. Beyond any reasonable doubt, there is plenty of oil in the South, which will come to the surface when needed.

I am quite sure that an impression has prevailed in the North that the agricultural possibilities of Northern Alabama are extremely limited. Even the remarkably fertile valley of the Tennessee has not escaped from the effect of this adverse opinion, which, I am afraid, has been rather encouraged by the representatives of the shrewd but misleading Northwestern propaganda. I know that the hill country from Decatur to Birmingham has had little credit or renown as a farming region, at least until recently; yet it is in that district that a syndicate composed of the most long-headed capitalists of Cincinnati the other day bought 170,000 acres of land of the Louisville & Nashville Land Department. The justification for this adventure is to be found in the eminent success which the German colony of Cullman has achieved in the vicinity of the purchase. I have before mentioned something of the material progress of this colony. It is settled upon soil that would not favorably impress a Western prairie farmer at first sight. To the man used to the heavy black loam of Minnesota or Iowa the soil would seem thin and poor. But a reliable crop record is worth several dozen appearances; and I think the experience of the Cullman colonists will satisfy anybody that, with intelligent, intensive cultivation, the lands of Northern Alabama will compare well in results with any agricultural district South or North. On a recent trip through the neighborhood I found one industrious German-American farmer who had standing a solid 20 acres of Indian corn, every stalk of which bore five or six huge ears, all handsomely filled out, sound, and in every way calculated to take the first premium at any county fair in any State. All of the crop in question has been reserved for seed. The land was not fertilized otherwise than with what the stable and cattle yard afforded, and the yield netted over 60 bushels to the acre. The vineyards of Cullman county are rapidly becoming celebrated, and the grape crop is proving a profitable one to the farmers. They not infrequently realize \$200 or more per acre from their vines, and as whole families are trained in the culture, the quantity of fruit a single farmer can produce with little if any hired help is something remarkable. One farmer at Cullman netted \$300 per acre this year on his strawberry plantation, and the colony's traffic with Nashville, Louisville, Cincinnati, Mobile, New Orleans and Pensacola in butter, eggs, poultry and vegetables is large and growing rapidly. The region is filling up from all directions, but principally now from Ohio and Pennsylvania. Thriving towns like Blount Springs, Warrior, Cullman and Hanceville; saw mills, wood-working industries of all sorts, and so on, give evidence that the prosperity of the country side is generally substantial.

Remembering what important interests are at risk in connection with the ever recurring agitation of the tariff question in Congress, it seems to me that the people identified with the infant industries of the South are extremely indifferent to the demands of the situation. Eastern and Western interests dependent upon the policy of protection for their existence are all properly and thoroughly organized for mutual assistance, and to present a united front at

Washington in times of danger. One of those times is probably at hand, and yet the industrial forces of the New South are unorganized, without acknowledged leadership, and in no wise prepared to make a combined fight, if need be, for their right to live and progress. Perhaps the sugar interest of Louisiana may form an exception, and I believe it has some organized means for presenting and protecting its claims before the national legislature; but the Southern cotton, woolen, coal, iron, pottery and other manufacturing industries are, as far as I am advised, without anything of the sort. Here is an opportunity, one would think, to hold a Southern industrial convention to some purpose. All these branches of industry have a common interest in seeing that the development of the section is not choked through the machinations of the free-trade doctrinaires and the limited class whose commercial advantage would be found in that policy, and, having that common interest, they might do worse than get together and make common cause against the common enemy. Without some such action I think it is to be feared that our Southern delegations in Congress will not feel sufficiently the pressure of public opinion, which in this case particularly needs crystallization and concrete expression. If the MANUFACTURERS' RECORD would use its wide influence among the industrial circles of the New South, and secure such an organization for mutual assistance and defence, I believe that a great and lasting good to the section would be thereby accomplished.

The iron situation here is without much change since my latest previous letter. The advance of \$1 per ton all around on pig iron is still maintained, with every prospect of a further advance early in the year. Several facts seem to justify this view. The enhanced value and strong demand for iron coming at the end of the year ought to be rather good evidence that the business community of the country believes that the annual clean-up of affairs will make a good showing, and that a steady upward movement of values will set in early in 1886. The fact is well authenticated, too, that the railways of the United States are now compelled to enter the market for material with which to construct new rolling stock, and to repair tracks and equipment generally. As a prominent railway president remarked in Birmingham the other day: "The American railways have been wearing their old clothes for three years, until they are ragged and gone. They must be replaced, and that very soon." Considerations like these do not tend to make our iron-masters anxious to sell, but they do have the effect of giving everybody confidence, and the natural consequence is that business in all lines here is showing renewed activity, and everybody is busy and happy. The enquiry for farming and mineral lands is more active than has been the case for a long time. People who happen to be possessed of choice coal and iron territory are especially fortunate just now, as the capitalists of the East and Europe appear to have waked up at last, and the local experts are receiving orders by every mail to examine and report on the various lots in the market. One very desirable large property, exceptionally well situated for furnace and iron and coal mining purposes on the largest scale, is being actively canvassed by a wealthy banking and manufacturing syndicate in Frankfort and Homburg. An English syndicate, hitherto alluded to, is endeavoring to pick up another attractive property now owned by the Louisville & Nashville Railway, and I might name half a dozen others in course of negotiation. The truth concerning the resources and advantages of Birmingham and its vicinity are but just becoming understood, but being so at last, we may safely predict very extensive movements and developments within the coming twelvemonth.

G. B. W.

## A Progressive Town.

MORRISTOWN, TENN., Dec. 4, 1885.

Editor Manufacturers' Record:

This town, the point of intersection between the Tennessee and Carolina systems of railroads, is steadily prosperous. A large area in the surrounding country was planted in tobacco this year. The yield has been good and the quality excellent. It is understood that a large tobacco factory will be built soon by home capital.

A new tannery, built by Connecticut capital and conducted by Connecticut skill, has gone into operation; and arrangements were nearly perfected some time ago for the organization of a company to manufacture boots and shoes on a large scale. Our little city is becoming quite cosmopolitan. Many of our best people are from Northern and Eastern States. A few weeks ago a gentleman from Wisconsin bought out one of our local newspaper establishments and is now conducting a live newspaper here. Several thousand dollars worth of town lots have been purchased this year, and a large number of houses erected and several old ones enlarged and remodeled. The capital stock for a new national bank is all subscribed, and the bank will begin business about the first of January.

Extensive deposits of zinc ore, said to be of fine quality, have been discovered in the immediate vicinity.

Our lumber mills and builders are all busy and prosperous.

The town and surrounding country offer splendid inducements to investors, and to parties seeking a most desirable and healthful climate.

W. H. COFFMAN.

## North Carolina Minerals.

HARRISBURG, PA., Dec. 4, 1885.

Editor Manufacturers' Record:

I noticed with some interest the article in your paper of November 21st, prepared by Mr. T. K. Bruner, of Salisbury, N. C., under the heading of "Leopardite." It may be of some interest to your readers to know that the same kind of rock has been found in large quantities upon the property of the Marion Bullion Company, in McDowell county, North Carolina. The green spots are of a deep, rich green color, separated from each other by rock of a creamy white appearance. This matrix is not quite hard enough for feldspar, but much harder than creamy white gypsum. It occurred to me at the time of its discovery that it would make a very beautiful and ornamental building stone, and it is the intention of the company ere long to prepare some of it for that purpose. It certainly surpasses, in richness of color and beauty, any of the building stones now used in our large Eastern cities. It may also be of some interest to your readers to know that a fine quality of molybdenite has been found upon our property, in micaceous rock, while drifting into a mountain side for mica. I do not remember having seen this mineral mentioned in any of the geological reports of North Carolina.

H. C. DEMMING,

Sec'y and Gen'l Man'gr Marian Bullion Co.

THE great superiority of American over European mining machinery is illustrated in the case of the famous El Callao mines, in Venezuela. A couple of years ago that company purchased a compressor and rock-drills in Europe, but after a trial threw them out and put in Ingersoll compressors and twelve Ingersoll drills. Recently, eight more of these drills have been ordered, the first lot having given great satisfaction. Our readers will remember that the new hoisting-engines of the Callao Company were furnished by the Dickson Company, Scranton, Pa.—Engineering and Mining Journal.



## ANNISTON, ALA.

**Its Location and History; Its Facilities and Advantages for Trade and Manufactures; The Noted Anniston Inn; Anniston's Attractions as a Home.**

**"The Model City of the South."**

As a specimen of the rapid development of Southern towns that have only come into existence within the last few years, we present the following description of Anniston, Ala.: The town is on the main line of the East Tennessee, Virginia & Georgia Railroad, and at the crossing of the main line of the Georgia Pacific Railroad, between Atlanta and Birmingham. It is but a few hours' ride from Atlanta, Columbus, Macon and Rome, Ga., or from Montgomery, Mobile and Selma, Ala., or from Knoxville, Chattanooga and Nashville, Tenn., and only two hours from Birmingham. It is situated in the heart of the mineral and finest agricultural region of Alabama, Tennessee and Georgia. It is reached by three grand trunk lines—the East Tennessee, Virginia & Georgia, the Richmond & Danville, and the Queen & Crescent roads. New Orleans, but 14 hours distant, is reached from Anniston in a night's ride in a sleeping car. Anniston is only 17 hours from Cincinnati, and can be reached in 26 hours from Washington, being on the short line of travel from the East, North and Northwest to Florida and New Orleans. The town is built on a slope of Blue Mountain, a chain of the Blue Ridge, on the most beautiful site that could be selected for a town south of the Potomac, or north of it for that matter. It is one of the highest points accessible to

stock Iron Company afterwards added, by judicious purchases from time to time, over 40,000 acres, making it one of the finest properties in America, and worked the wonders now to be seen where was a wilderness 13 years ago. Within a few feet of the spot where was found the first suggestion of the wealth that lay within those hills, hundreds of men are daily digging from the soil the finest iron ore to be found in this country. The process is so simple that it does not suggest the usual associations of a mine. The ore is everywhere in the soil. There is no tunnelling or delving into depths. Nature left her riches on the surface, and they are

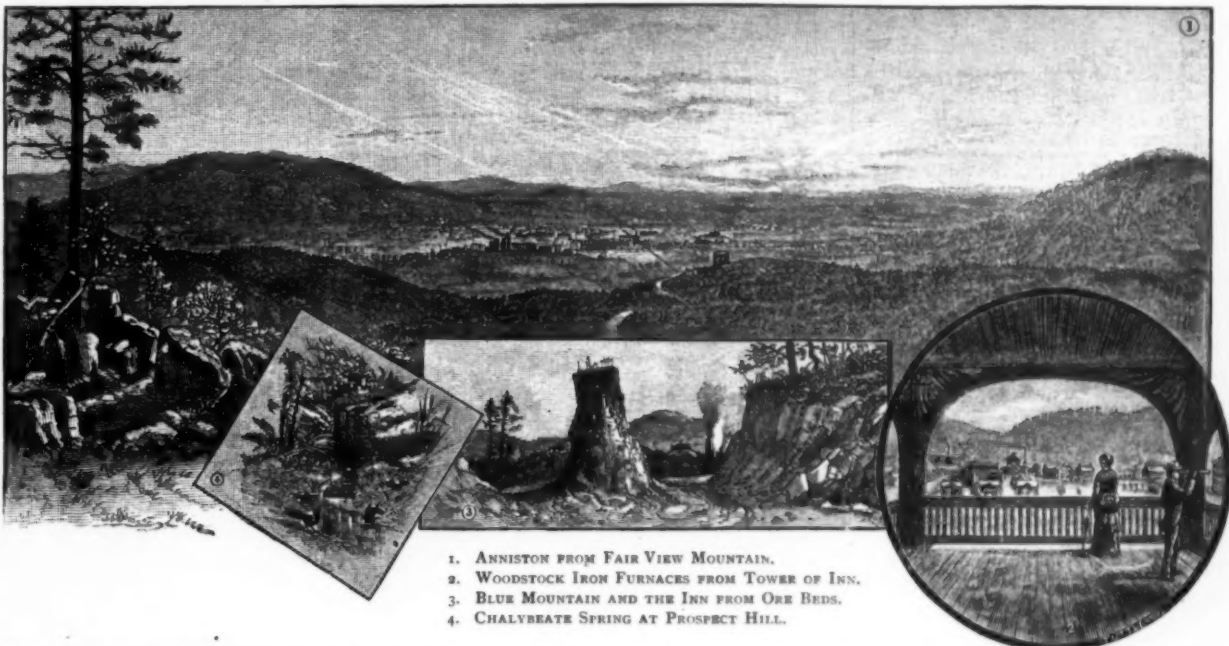
finest in the State, was completed. In 1882 the car-wheel works of Noble Bros. were moved from Rome, Ga., to Anniston. Other industries were established on an extensive scale.

Meanwhile a model city had been laid out, a perfect system of drainage designed, the streets macadamized, water-works, stores, churches and schools built, railroad connections secured, and the nucleus of a great town planted in the most salubrious and beautiful spot of North Alabama.

Prior to 1883 no land was sold to anybody. The entire business of the place was done by the founders and owners, who were also

churches, hotels, and establish such industries as would give lucrative and fitting employment to its people. They felt that this work, involving heavy expense and the prosecution of one single plan, could not be done with a population of various grades of wealth and of diverse ideas. They therefore, for this reason, shut the general public out of the city.

When, however, this work had all been done, the proprietors, in 1883, threw open the city to the public. The city had then better streets, sidewalks, parks, shade trees, water-works, schools, churches, hotels, etc., than any city of 20,000 inhabitants. These



1. ANNISTON FROM FAIR VIEW MOUNTAIN.  
2. WOODSTOCK IRON FURNACES FROM TOWER OF INN.  
3. BLUE MOUNTAIN AND THE INN FROM ORE BEDS.  
4. CHALYBEATE SPRING AT PROSPECT HILL.

taken out as simply and as safely as the farmer digs his potatoes. For 10 years this one hillside has been drawn on, and as yet it seems merely scratched as one looks up-

the proprietors of the furnaces, factories, foundries, machine shops, saw mills, stores, etc. The city was kept closed to the public up to this date not through any feeling of

were built by the company and did not entail one dollar of debt on the city. All the local improvements and the three railroads brought to Anniston did not leave one cent of debt on the city or its future population. The population, which at this time was about 4,000, began to increase rapidly as the fame of Anniston's attractions and advantages spread abroad.

The company very materially aided the different religious denominations by donating them building lots for churches. The Episcopalians, Presbyterians, Baptists, Methodists and Roman Catholics have built or are building very handsome churches and parsonages. Grace Episcopal church, built by the Tyler and Noble families, is the handsomest structure in the State. It is built of cut sandstone from the quarries at Anniston. The interior is finished throughout in red cedar, highly finished. The windows are of stained glass. The tower contains a chime of six bells. The colored population have also their separate churches and schools.

By act of legislature, Anniston is made a separate school district. The schools are controlled by the Mayor and Council and school superintendent. Great interest has been taken in establishing them. Anniston, for its population, has

the largest and most flourishing public schools in the State. In addition, there are two pay schools for boys and girls.

Plans have been prepared and work commenced on two colleges for boys and girls. They will be open to all denominations, but will be under the charge of the bishop and rector of the Episcopal church.

Nowhere on this continent has so much been so well, so effectually done in any town that has been opened to the public, in establishing manufactures, organizing and sustaining schools, building railroads and hotels, providing water-works, electric lights, grading, macadamizing and rolling the streets,



MOBILE BLOCK, ON NOBLE STREET.

railroads in the State, and for climate, health and beauty of scenery, it stands unrivalled.

**ITS HISTORY.**

Some 18 years ago, Mr. Samuel Noble, for the first time visiting the ruins of the old furnace built and destroyed during the war, was astounded to see the enormous deposits of iron ore, its richness and excellent quality. Being impressed by the great beauty of the situation, and its natural advantages as a manufacturing and distributing point, he purchased the largest and main deposits of iron ore, and continued adding to the property by other purchases until 1872, when the present company was formed. The Wood-

ward to the great slope and the thousands of acres above which are almost solid iron. A century of such labor would not begin to impoverish this mighty depository. But it is hardly richer than its sister hills, which form a bulwark about the city.

In 1872 the Woodstock Iron Company was formed by General Danl. Tyler, Alfred L. Tyler, E. L. Tyler, James Noble, Sr., John W., Samuel and William Noble, and the first furnace of the company was completed and started in April, 1873, at Anniston.

The second furnace was completed and started in August, 1879.

In 1881 a cotton factory, the largest and

exclusiveness on the part of the proprietors or any desire on their part to control the trade of the city and the surrounding country. They desired simply to lay the basis of the city in a proper way; to so arrange its drainage that when it became a great city there could be no trouble in keeping it clean and healthy; to so lay off its streets that the city would be systematic and well proportioned, and to so macadamize them that they would afford safe and pleasant drives; to provide the city with parks located at proper places, and with water-works that would protect and beautify the city and give the citizens convenience and comfort; to build schools,



planting shade trees, paving drains—all combining to make Anniston the most beautiful, cleanest, healthiest, best drained town in the United States.

The liberal policy of the Anniston Land & Improvement Company, who own the bulk of the real estate in the corporate limits, has established many other industries. Every encouragement is offered to new industries, with rates of freight to and from all points as low as the most favored city. The richest and most populous agricultural counties of the State tributary to it, and placed in the very heart of the rich iron and coal region of the State; supplied with an abundance of the purest freestone water, and with a climate unrivalled; with the best of labor, healthy and contented, and the sale of liquor banished from the county, it is now the manufacturing and commercial center of North Alabama, and will be the great manufacturing center of the State, if not of the South.

#### THE ANNISTON IRON DISTRICT.

Very little has heretofore been written on this, the most important iron district in Alabama, nor has even a hint been given of its wonderful wealth in material, its already large development, or its peculiarly fortunate position in regard to transportation lines.

The Anniston district embraces the furnaces and iron region on each side of the East Tennessee, Virginia & Georgia Railroad, from Cave Spring, Ga., to Montevallo, Ala., as well as the remarkable iron deposits along the line of the Anniston & Atlantic Railroad for 50 miles south of Anniston. The latter road will connect with the Central Railroad system of Savannah, Ga., and with the new roads of the Shelby Iron Works, which will afford connection with the Louisville & Nashville system near Calera. The Anniston & Northern road, now under contract, making connection with the Cincinnati Southern system near Gadsden, thus fixes Anniston as the center of the very richest iron region in the South. This district now embraces Etna Furnace, 20 tons capacity; Cherokee, 50 tons; Tecumseh, 50 tons; Stonewall, 25 tons; Rock Run, 35 tons; Woodstock, two furnaces, 50 tons each; Clifton Furnace No. 1, 25 tons; Clifton New Furnace, 60 tons; Shelby Iron Works, two furnaces, 50 tons each; Brierfield, 25 tons per day—12 furnaces in all.

These furnaces have heretofore been run on charcoal supplied from the immense forests of yellow pine contiguous to them. Many of them will continue to use charcoal for fuel exclusively for years to come. Some own such large bodies of timber land that they can use the same fuel indefinitely.

The construction of the East & West Railroad having opened up the Coosa coal-field, the developing of the Broken Arrow mines and building of coke ovens by that company and others, and the opening of the Cahawba mines, 45 miles west of Anniston, on the Georgia Pacific Railroad, places the Anniston district in a far more advantageous position for making cheap iron than its younger neighbor, the Birmingham district. Anniston is now within 25 miles of the Coosa coal-field, which affords the best coking coal in the South, and within 45 miles of the Cahawba, putting it on an equality with Birmingham as far as cheap fuel goes; but otherwise the advantage is all on the side of the Anniston district—in the abundance and excellence of its ores, being lower in silica and phosphorus and richer in iron, requiring less limestone and less coke to make a ton of iron, and producing iron of superior quality for all purposes.

The effect of an assured supply of coke is already seen in the late enlargement of the Cherokee Furnace, increasing its capacity to 100 tons per day, and the substitution of coke for charcoal. The Tecumseh Iron Works propose making a change similar to that made by the Cherokee, and the Woodstock Iron Company are making preparations for the building of two first-class coke furnaces of daily capacity of 100 tons each. The construction of these will be a continu-

ation of the development of this section that will, without doubt, make Anniston the great iron center of the South.

The advantages of the Anniston district over all others is made apparent to the practical iron manufacturer not only by the abundance and excellence of the ores and the ease of procuring certain supplies of cheap fuel, but also by the entire absence of difficulty in mining the ores. So far, in every case, the ore is mined in open cut.

vallo, Ala., for many miles on each side, extensive deposits of rich ores exist, and deposits of equal magnitude are found for several miles east and west of Anniston, on the Georgia Pacific road. The most remarkable deposits occur on the line of the new Anniston & Atlantic road, and still more ore will be made accessible by the completion of the Anniston & Northern, which will also bring the Coosa Furnace at Gadsden, with the red fossiliferous ores, into the Anniston district.

ing that of any other place in the South. The neighboring mountains possess exhaustless supplies of coal easily and cheaply mined. Iron can be made at a lower cost than at any other point in the South, making no exception. For miles around there is a magnificent sweep of heavily timbered lands. From the surrounding forests the finest Georgia pine and hard-wood lumber are furnished. Anniston is a competitive railroad point, and commands favorable freight rates to all mar-

kets. Thus, for manufacturing, the raw material is cheap, easily accessible and of the best kind, and there is every facility for cheaply transporting the product to market. The remarkable and unvarying success of such manufacturing enterprises as have been established in Anniston is convincing evidence of its superior advantages.

For any kind of general business Anniston is an inviting field. Tributary to the city, north and south on the East Tennessee, Virginia & Georgia Railroad, east and west on the Georgia Pacific Railroad, and for 50 miles south on the Anniston & Atlantic Railroad, is the richest and most populous agricultural country in the South, which, with the competitive freight rates that are, by location, the right of the city, gives to Anniston as a distributing point for wholesale and jobbing houses a most favorable location. Several wholesale grocery and commission houses are doing a large and profitable business, and daily increasing the volume of trade and extending their territory. A most flattering opening is here presented for wholesale dry goods, notion, boot and shoe, hardware and agricultural implement houses. The trade is ready at hand and needs only to be sought to repay the merchant in handsome returns for his venture. There are two banks in the city—one national, the First National Bank of Anniston, capital \$100,000, all paid in; Duncan T. Parker, president; Saml. Noble, vice-president, and O. E. Smith, cashier; the other, the banking house of R. J. Riddle & Co. They are both doing a very satisfactory business, and are liberal, public-spirited institutions, always ready to exert themselves in furthering any enterprise for the development of the grand resources of this section.

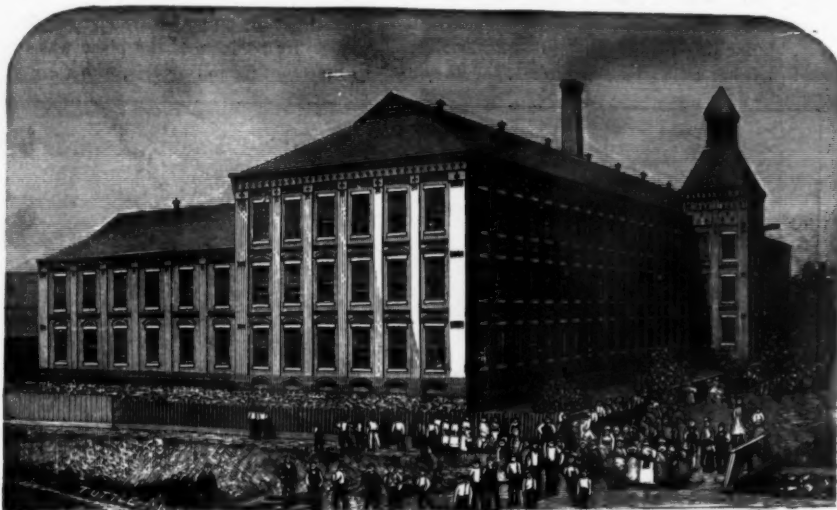
To give some idea of the present extent of Anniston's commercial and manufacturing interests, the following description of the leading establishments now in existence there is presented:

#### THE WOODSTOCK IRON COMPANY.

The officers of this concern are A. L. Tyler, president; Sidney F. Tyler, vice-president; Samuel Noble, secretary and treasurer; Charles Noble, superintendent of furnaces and mines.

The first furnace was projected by the present president and secretary in 1872. The furnaces and yards occupy about 50 acres. The location is all that could be desired, adjoining the main line of railroad, with several side tracks leading direct to furnaces.

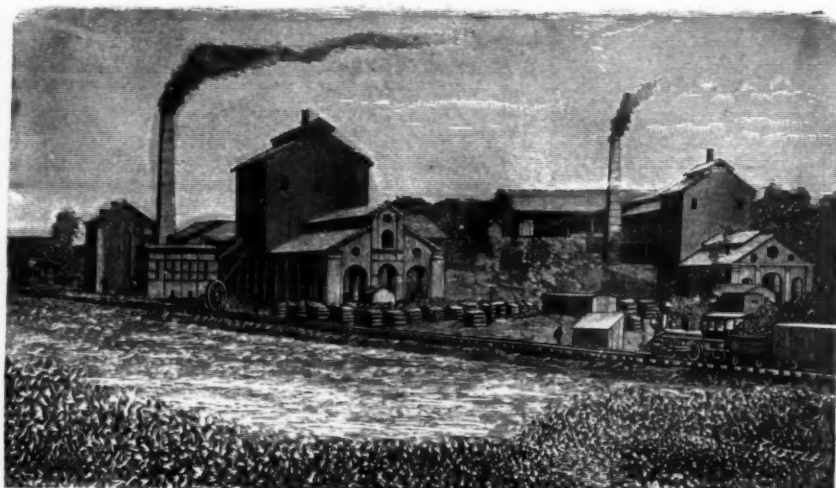
Furnace No. 1 was blown in 12 years ago; No. 2 in 1879, since which time they have never been stopped, except for occasional necessary repairs. With these furnaces the cast-iron V-tube hot-blast pipes are used. The heat required for making charcoal car-wheel iron is not as great as that needed for making foundry iron; therefore, the enormously expensive Whitwell ovens are not



ANNISTON MANUFACTURING CO.—COTTON MILLS.



CAR WHEEL WORKS AND MACHINE SHOPS.—NOBLE BROS. & CO.



WOODSTOCK FURNACES.

Mining consists simply in undermining and blasting down hills of ore, no underground mining or timbering being done.

The most noted deposits of ore are the mines owned by the Clifton, Woodstock and Shelby Companies. They have been worked for years and hardly show the signs of being touched, so immense are the quantities of ore in sight; while along the whole line of the East Tennessee, Virginia & Georgia Railroad, from Cave Spring, Ga., to Monte-

Prof. Toumey, in his geological report of Alabama, speaks of the locality where Anniston is now built as possessing exceptional advantages for iron manufacture. A furnace was built here during the war for the manufacture of iron for the Confederate Government, and was destroyed by the Federal forces in 1865 and never rebuilt.

#### ADVANTAGES FOR MANUFACTURES AND TRADE.

Anniston possesses natural advantages as a manufacturing and business point surpass-



used. The total height of Furnace No. 1 is 50 feet. The hearth is 5 feet 6 inches in diameter and the bosh 11 feet. The tuyeres are  $4\frac{1}{2}$  inches, six in number, and 48 inches in height. No. 2 is 50 feet high, 6 feet hearth, 12 feet bosh, and has six  $4\frac{1}{2}$ -inch tuyeres 50 inches high. Both furnaces are open fronts. Hydraulic hoists are used. No. 1 is only a 7-foot lift, owing to its being built on the side of a hill. The hoist at No. 2 is almost the entire height of the furnace. There are two Blake crushers in use. The coal and ore sheds and roasting and screening departments are well fitted up in every respect and are very extensive.

The engines are alike at both furnaces, have a 48-inch stroke, 36-inch steam cylinder and 72-inch blowing cylinder. The engine that drives the electric-light motor is supplied with steam direct from the furnace boilers, which is raised from waste gases in the furnace.

The mines have been worked (a portion of them within the city limits) since 1872. Millions of tons have been taken out, but millions more are left, and the deeper the mines go down the finer is the quality of the ore, while the width of the deposits increases. The ore is the brown hematite, yielding 50 per cent. iron.

At the mines are three ore washers, which wash from 40 to 50 tons each per day. The washers are run by 15-horse-power engines, and 12 carts are used for bringing the ore to the washers, from which it is loaded on the cars. A tramway is shortly to be laid from the mine to the dumps.

In addition to the two furnaces in the city, the company own two on the line of the Anniston & Atlantic Railroad, a line constructed by them, and penetrating for 50 miles the rich mineral and agricultural country which lies to the southwest. One of these furnaces is at the foot of a mountain. The ore is mined up on the slope, and is literally slid into the fire. A more perfect arrangement and juxtaposition of resources is not possible.

The history of iron manufacture at Anniston has been one of phenomenal success.

has extended throughout the whole country. The great enterprises of the Woodstock Iron Company, representing an investment of many millions, are flourishing in spite of the financial depression which, during the past few years, has proven fatal to so many

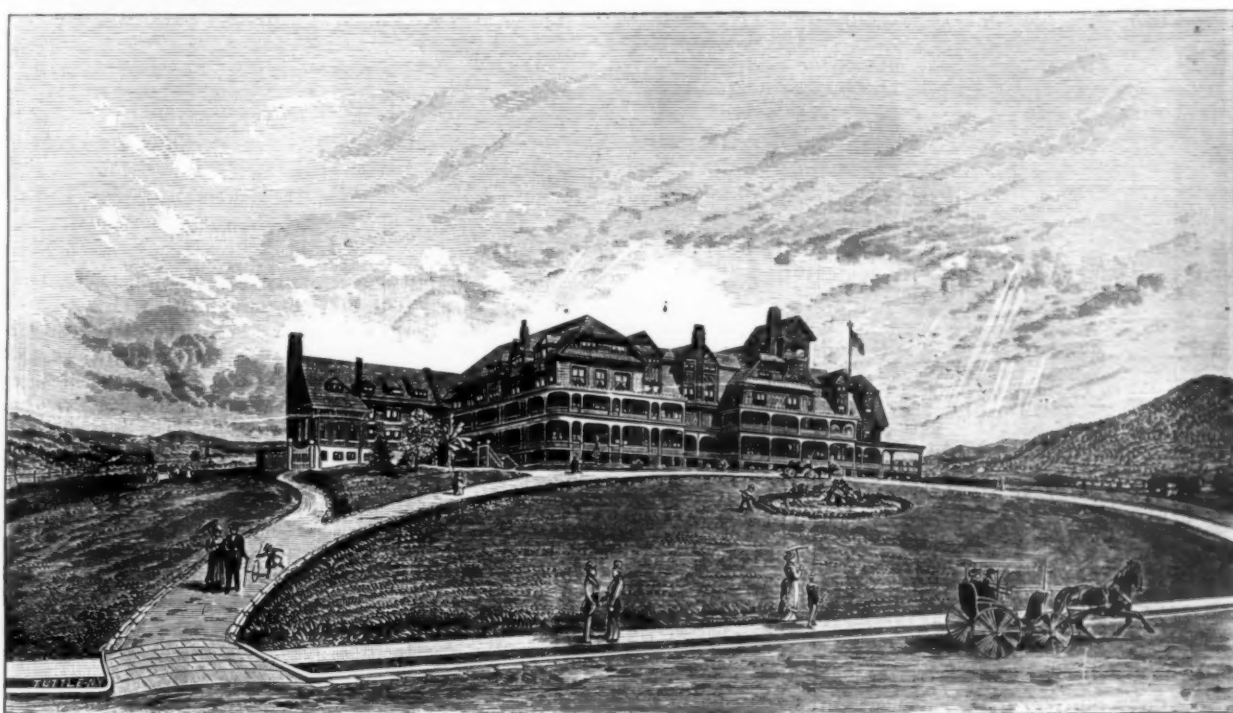
Knowing that, in the manufacture of pig iron, labor is the great factor, and that it being healthy, contented, comfortably housed, and a proper regard paid to its moral wants, the greatest possible results would be achieved, there has been no effort



OPERA BLOCK AND MERCHANT MILL.



GRACE EPISCOPAL CHURCH.



ANNISTON INN.

Since its furnaces were built the iron industry has suffered the severest depressions it has ever known, and the fires have been extinguished in the most favored regions. Anniston has never known what it was to see a cold furnace, and the fame of its fine iron

similar establishments. The management of this company recognized at the beginning the importance of having an organized force of contented labor, and to this end they have always thought first of the comfort of their employees, and then of their own gain.

spared to make the lives of the working people bright and happy. As they anticipated, their pains have been richly rewarded, and it can be safely asserted that the same results in actual wealth created would, at any other point in the South, have required 25 per cent. more labor.

## THE ANNISTON CAR WHEEL WORKS.

In 1882 the works of Noble Bros. were moved from Rome, Ga., to Anniston, for the manufacture of car wheels and axles, steam engines and heavy castings. The works comprise a two-story brick machine shop 50x150 feet, a foundry 84x335 feet, and the forge, 80x215 feet, and are built with every modern improvement, with hydraulic cranes for handling everything. The car wheel foundry has two cupolas with a melting capacity of 40,000 pounds per hour, and capable of turning out 300 car wheels per day. The machine shops are provided with improved machinery and tools for boring wheels, turning axles and constructing engines and heavy machinery, the whole operated by a 120-horse-power Corliss beam engine. The rolling mill and steam forge for making car and locomotive axles contains three steam hammers, together with a 200-horse-power engine for driving the rolls for working up scrap iron into muck bar ready for the steam hammer. The puddling furnaces have been provided for working up charcoal pig iron with the wrought iron scrap into axles. The entire plant of this firm is one of the largest and most complete of its kind in the Southern States. The wheels are manufactured of the charcoal iron produced at the Anniston and Clifton furnaces. It is unsurpassed for car-wheel purposes; is strong and of good chilling properties. The wheels are all guaranteed for 50,000 miles, and many of them run 150,000 miles. They are in use by most of the principal railroads in the South.

The tracks of the Georgia Pacific, East Tennessee, Virginia & Georgia and Anniston & Atlantic Railroads all run into the car-wheel works. The office is elegantly fitted; it contains a large fire-proof vault, and is more suggestive of that of a bank in a large city than a factory.

Messrs. John & William Noble are the managing partners of the concern. Their car wheels have obtained a reputation second to none in the South, and they are both practical machinists and gentlemen of great business capability.

## THE COTTON MILL.

is a handsome three-story brick building, the grounds in front of which are most attractive, being laid out with flower beds and rare and choice plants. It is owned by the Anniston Manufacturing Company, an incorporated company, of which A. L. Tyler is president, J. B. Goodwin, treasurer, and R. Hampson, superintendent. Adjoining are four iron fire-proof warehouses, which have a capacity for storing 6,000 bales of cotton.

The machine shop is furnished with two lathes, a planer and upright drill run by steam power. There is also a carpenter and blacksmith shop. This places the company in a position to do all their own repairs in the mill. The picker room has two breakers and three finishing and lapping machines, manufactured by Whitehead & Atherton, of Lowell, Mass. The card room contains 48 Biddeford cards and 48 Franklin Foundry cards, which run 12 in a section. The spinning room has a total number of 11,238 spindles (the highest number in the State) and six Lewiston warpers. The slasher room contains two Lowell hot air dressers. The weave shop, on the first floor, has 320 Lewiston looms. The cloth room, for finishing, folding, baling and stamping, is supplied with Lowell machinery for the different purposes. The motive power is a Buckeye engine of 300 horse-power, supplied by five boilers manufactured by Noble Bros. The building is supplied throughout with automatic sprinklers, fire-plugs with hose attached on each floor and hydrants surrounding the mill, which is close to the water-works. For the comfort of the



hands, dressing rooms are provided on each floor. The number of hands employed is 270.

The Anniston Mills are the largest in Alabama. They manufacture sheetings and shirtings, with a capacity of 115,000 yards per week, averaging 53½ yards to the loom per day of 10 hours. This product is shipped to New Orleans, Texas, New York and the larger towns and cities of the South. The water for the mill is supplied by the Anniston water-works and two fine springs which feed a large reservoir in the yard.

The village at the rear of the works is owned by the company, and contains 50 well-built and substantial houses, in which the factory hands reside.

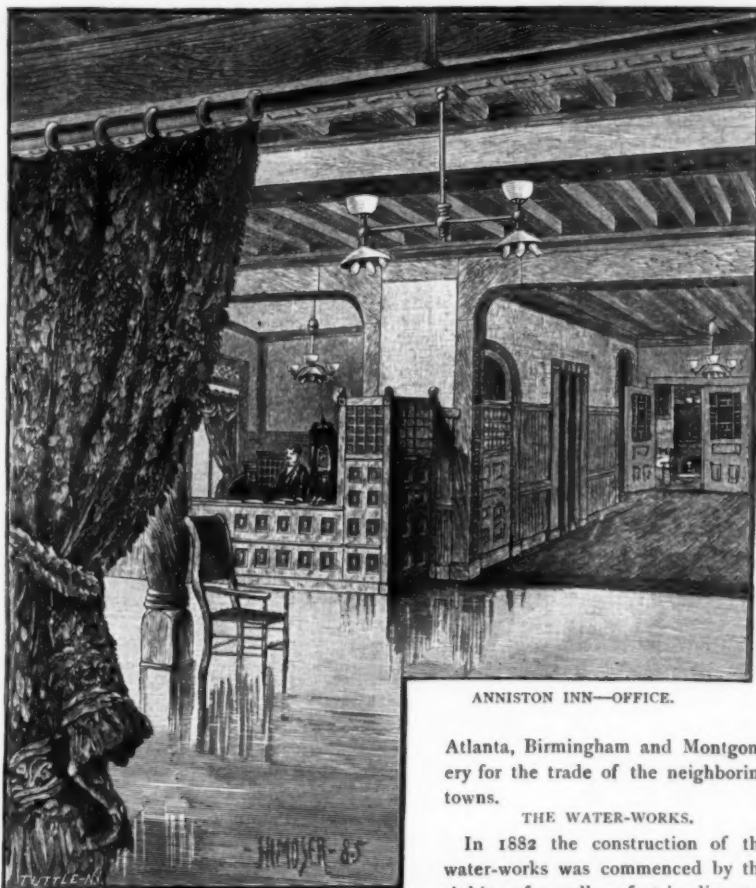
#### ANNISTON FOUNDRY.

This foundry, formerly of Cartersville, Ga., has been removed to Anniston and established on a larger scale. It was run at Cartersville in connection with the Georgia Car Company. The buildings are substantial and commodious. Murray & Stevenson are the proprietors, who manufacture all the castings for the Anniston Car company, with the exception of wheels, and do all the work for the Woodstock Iron Company's furnaces here and at Clifton, besides builders' castings and a general repair business.

#### THE ICE FACTORY

is owned by an incorporated company, of which W. J. Rushton is president, W. J. Cameron is secretary and treasurer, and F. W. Dixon manager. The factory is run by a Boyle ice machine and has an output of three tons per day. It is working to its full capacity at the present time, and will soon have to enlarge to meet the increasing demand.

These are a few of the establishments that have given to Anniston its character as a manufacturing city, for it is distinctively that; but they are only a hint of what the future will show. The cheapness of iron and coal, the near proximity of almost exhaustless supplies of the finest timber of all kinds, the transportation facilities for the distribution of products—these and other advantages are leading to the establishment of manufactures of various kinds. Factories for the manufacture of furniture, of agricultural implements, of carriages, wagons, etc., of hardware specialties, of railroad supplies, of stoves, and all the varied articles into which wood and iron enter, will be called into existence. Some are there now doing a flourishing business. Among other enterprises, there are two planing mills in constant operation. Fine residences and storehouses are in process of construction and its mercantile business is rapidly extending. There are scores of handsome retail stores with excellent stocks. Two wholesale houses do considerable jobbing, and send their drummers to contest with



ANNISTON INN—OFFICE.

Atlanta, Birmingham and Montgomery for the trade of the neighboring towns.

#### THE WATER-WORKS.

In 1882 the construction of the water-works was commenced by the sinking of a well 10 feet in diameter

to light the town and furnaces by electricity. This was done by putting up arc lamps of 2,000 candle power in different parts of the city.

#### THE FAMOUS ANNISTON INN.

This is a building deserving special mention. It was commenced in the fall of 1884, and finished and opened to the public in April, 1885. It has been pronounced the completest hotel in the South, and no man who has not seen it has a right to dispute that claim. It is a graceful specimen of Queen Anne architecture. Its very appearance is an invitation to rest and ease. The wide verandas extending entirely around the first three floors indicate easy chairs and delicious breezes as far as they can be seen. The approach to the inn is past a 20-acre lawn, in the center of which a lake is being constructed, and up the graveled walks which wind their way through the luxuriant blue-grass to the broad stone stairway at the main entrance. The interior of the inn more than fulfills the expectation awakened by its external attractions. It is simply perfect in all its appointments. The interior finish is of solid wood polished like satin, and relieved by unique tiles and rich tapestry. The square windows with their stained glass and artistic draperies soften the scene with a peculiarly fine effect. The parlors are magnificently furnished, and offer many tempting devices for the ease of their occupants. The bed rooms are large and perfectly ventilated, and from the second to the fifth floor are furnished in equal style and taste. But the most beautiful apartment in this elegant establishment is the dining room. Its walls are of oak, with exquisitely carved ornaments and the finest attainable



ANNISTON INN—PARLOR.

polish. The glowing arches which span it in three places and the exquisite inlaid work which shines about the windows, in various designs are among the many things to admire in this royal room. Its tables are furnished with the clearest crystal, the brightest silver and the most beautiful china. The menu is in keeping with the elegance of the table settings. The entire house is lighted both with incandescent electric lights and with gas. It is kept in every respect up to the metropolitan standard, and is under the superintendence of Mr. Harry Hardell, a well-known Philadelphia hotel man, who is assisted by Mr. Pendleton, of Richmond, Va. From the verandas of the hotel a superb view is had. The breezes sweeping constantly through the wide arches and the fluttering curtains make the inn a most tempting summer resort, and it is arranged to be kept warm and cosy in winter, so that whenever the traveler finds shelter beneath its roof he can be comfortable and happy. The following detailed description of it is taken from the Atlanta Constitution:

"The architecture of the inn is Queen Anne. The first story is cut stone, the second of pressed brick, and the third and fourth and fifth of heavy framed work,



ANNISTON INN—GRAND STAIRCASE.

and 80 feet deep, the whole lined with a heavy cast iron curbing put in in segments, all bolted securely together. A splendid 150-horse-power beam engine was built and placed into position to pump the water from the well and force it to the reservoir, at an elevation of 236 feet, on one of the hills east of the city, one and a-half miles distant. Heavy iron pipes were laid through the streets; over 40 fire hydrants were put up at different points where property was most exposed, and Anniston provided with a supply of pure, clear, mountain spring water distributed over the town at a pressure of 100 pounds to the inch. The reservoir is always full, and the pressure constant and great enough to dispense with the use of fire engines, hose carriages only being employed, giving Anniston water facilities and fire protection unsurpassed by any city in the United States.

#### ELECTRIC LIGHTS.

In 1884 a contract was made with the Brush Electric Light Company for a plant



covered with California redwood shingles and Georgia slate. The wide windows, heavy window frames, gables and large bay windows give a grand and picturesque effect. The interior, from the first floor to the top, is one beautiful piece of cabinet work of oak, selected Southern pine, California redwood and walnut. The ceilings, floor, beams, wainscoting and window, door casings, hall, offices, ladies and gentlemen's parlor, the sitting and dining room, have been finished and highly polished, bringing out the natural grain of the wood as perfect-

thing of beauty—well lighted with broad square and bay windows on every side—the upper sash, with small stained glass, being stationary; the lower being doors of large glass swinging on hinges, opening outward—all the windows being hung with heavy rich Turcoman curtains, the floor carpeted with heavy Hartford body Brussels carpets, as are the halls, office, gentlemen's parlor and smoking room, stairway, and every chamber in the Inn. The chambers are large and splendidly ventilated—windows of double width, protected by linen

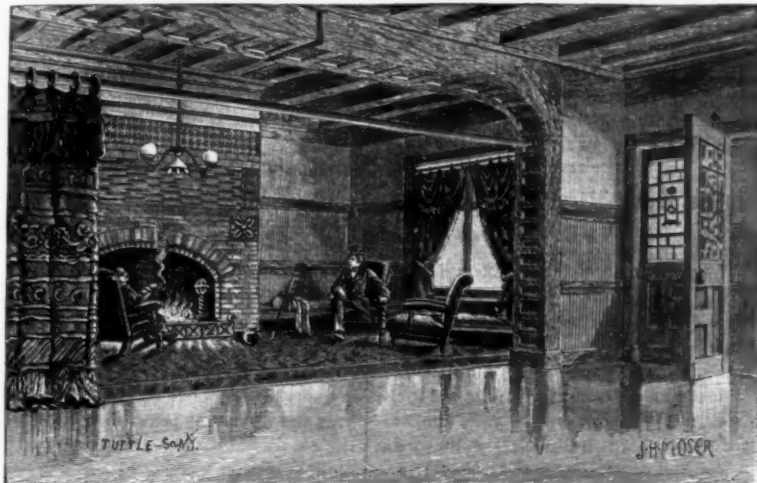
for daily use. On the first floor of the building known as the annex are the steam laundry, ironing room, bakery and boiler room, with two 40-horse-power locomotive boilers to heat the building and run the electric engines. On the second floor is the kitchen, serving room, china and silver room and pantry, all fitted in the most thorough manner. The two floors above are the servants' quarters, being a small inn of itself, the rooms being nicely furnished and carpeted, with bath rooms and closets on each floor."

#### AS A PLACE OF RESIDENCE.

Anniston combines unexampled advantages as a manufacturing and business center, with all that can be desired to make up the attractions of a delightful and healthy home. The site of this town possesses every feature that an experienced engineer would desire in selecting a perfect location for a city. It is the highest point on a railroad in Alabama. The beautiful valley in which it is situated lies at the foot of Blue Mountain range, 800 feet above tidewater, and, sloping from the east and west to the center, with a gentle fall toward the south, there is afforded the most perfect natural drainage. This natural advantage has been supplemented by a splendid system of drainage constructed by the founders of the city. The Blue Mountain range towers 1,000 feet above the valley, and its picturesque slopes present the most attractive building sites, from which the eye is delighted by long stretches of beautiful scenery and extended views of the country beyond, to a distance of 30 miles or more.

The three essentials of a good home are: 1st. Pure air. 2d. Good Water. 3d. A salubrious climate. All of these are to be found at Anniston. The air sweeps over the upland valleys and table lands nearly 1,000 feet above the sea level; pure and sparkling water from the mountain ranges is obtained, while the climate is delicious the year through. Its pure air from pine-clad

with sewers. The streets are broad and smooth, with wide, well-paved sidewalks. No expense or pains have been spared in grading and improving the streets, which are covered with crushed slag, and rolled down to a perfection of hard, smooth, clean surface, splendid for riding and driving. A finely-constructed turnpike road across the mountain east of Anniston to the beautiful Choccolocco Valley beyond will afford a drive over what is probably the finest highway in Alabama. The city is lighted by electricity, the streets, the hotel, opera house, furnaces, etc., all being illuminated by the Brush system. There is a fine system of public schools. There are five churches, besides those for colored persons. There are now in course of erection two churches, which, for architectural beauty and elegance of interior finish, will compare favorably with any in the oldest and wealthiest portions of our country. There are beautiful parks and shade trees. The stores are fine, solid, commodious brick structures, some with handsome iron fronts and large plate-glass windows. One is struck with the neat, clean, well-to-do appearance of the business houses, and the entire absence of the small shed and shanty style of stores common in towns the size of Anniston. The merchants are brisk, live, vigorous; they all seem to be busy and prosperous. There is an air of thrift pervading everything. The residents, from one end of the town to the other, seem imbued with a sense of cleanliness and neatness and order. The influence of the founders of the town has made itself felt everywhere, and the streets and buildings are kept in perfect condition. Everybody seems proud of the town and anxious to do his part towards keeping up its reputation. In and around the city are some magnificent private residences, the homes of proprietors of manufacturing establishments here. Those outside of the city have extensive grounds, with handsome lawns ornamented with evergreens, flowers, etc.,

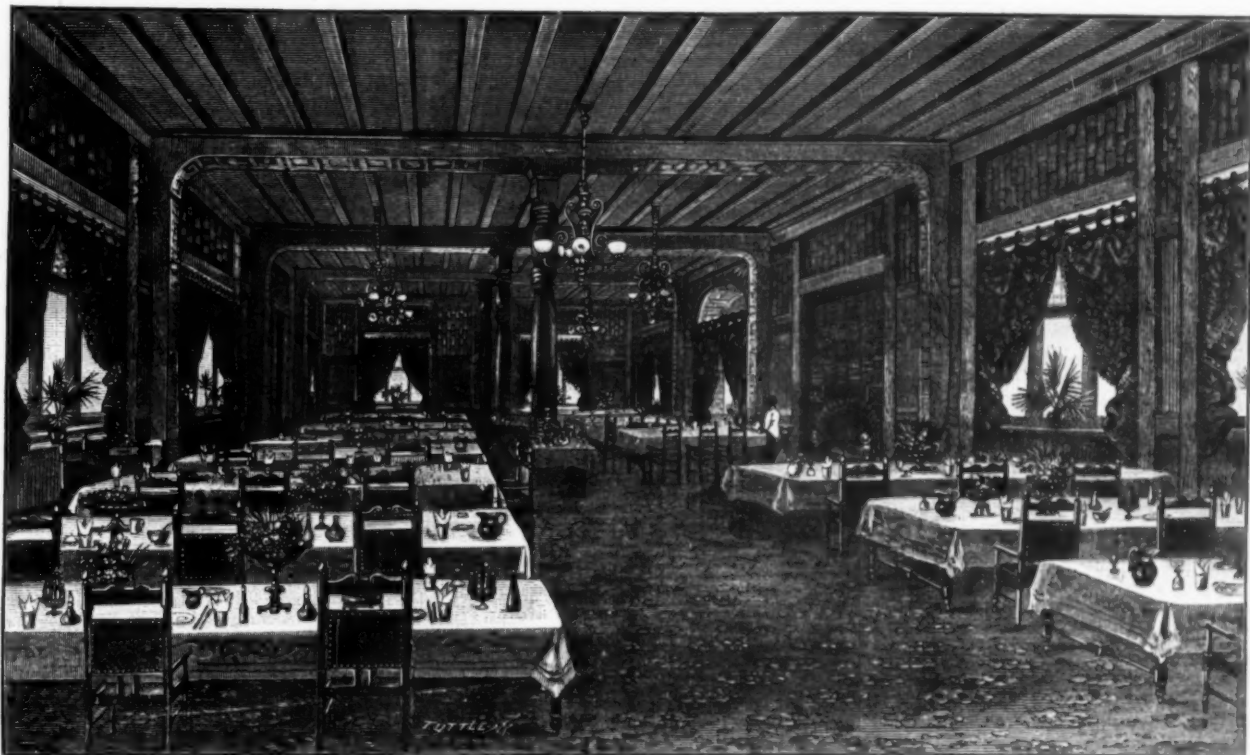


ANNISTON INN—SMOKING ALCOVE.

ly as the finest finished furniture. The heavy girders supporting the ceiling of the dining room, ladies' parlor and rotunda have been encased in oak beautifully paneled and polished. The grand staircase is a masterpiece of workmanship and art; built of massive polished oak and flanked on every floor with beautiful stained-glass windows. The ladies' chambers are large, with wide windows, all opening so each window gives a view of the grand scenery beyond. Every room from basement to the top floor, as well as the broad porch that extends for nearly a quarter of a mile around the building, is lighted by the Brush incandescent light, the whole arranged either for gas or electricity. The building is heated throughout by hot water conveyed through pipes and register in the rooms and halls, while the baths and water closets are supplied on every floor with abundance of clean water from the mountain water-works, and the entire building protected in case of fire by hose on each floor; water always on at a high pressure from the mountain reservoir. The elevators are run by hydraulic pressure from the same source.

"The ladies' parlor is carpeted with heavy Wilton carpet; the windows draped with heavy Turcoman old gold and velvet curtains suspended by brass poles and brackets. The furniture is upholstered with blue and crimson silk plush; the tables are ebony beautifully inlaid; the chandeliers are yellow brass, with center-piece of beaten copper ornamented with silver. The fireplaces in parlor, gentlemen's sitting room and dining room are built of 'terra cotta,' are very wide and old fashioned, extending from floor to ceiling, and are ornamented with heavy brass andirons and fenders. The upper sash of the windows of first floor, as well as the doors to ladies' parlor and main hall, are stained glass; the windows and archways are all draped with rich Turcoman curtains. The furniture of office and gentlemen's parlor is cherry, beautifully carved—the large arm and smokers' chairs, cherry, cushioned with olive green leather; the writing table, a desk of cherry, elegantly finished. The dining room is a gem—a

window shades on spring rollers; next with folding inside blinds. The windows of every chamber are draped with costly Madras curtains. Many of the suites of rooms have bay windows and broad tile fireplaces, with massive paneled mantels of polished yellow pine and beveled plate-glass mirrors. The furniture of chambers is highly polished cherry and ash, each bed furnished with a spring and hair mattress; the pillows and bolsters of feathers of best quality. The blankets, quilts and linens are



ANNISTON INN—DINING ROOM.

of the finest quality, and in keeping with the surroundings.

"The table linen is of the choicest quality; the silver plain, but massive; the china and glass are in keeping with the whole. Two hundred guests can be comfortably seated. The children's and servants' dining rooms are fitted up in the same manner as the main dining room. The Inn has two large refrigerators on the ground floor capable of holding a car load of meat and fruit, and one large refrigerator for general storage, and a smaller one on kitchen floor

mountains, its pure water, its absolute freedom from all malarial influences and from mosquitoes, its equable climate—free from the rigorous winters of the North and from the oppressive heat of less elevated localities South—make this, in point of health and comfort, equal to any locality on this continent. In addition to natural charms, everything that could contribute to the attractiveness of the city has been done. It was completely surveyed and laid off before a house was built; then the streets were planted with shade trees and tunneled

and provided with all the comforts and conveniences and luxurious appointments that could be possessed in suburban homes around any large city. Fine lawns, terraces, orchards, shrubbery, ornamental gardening, conservatories, &c., show the refined tastes of the people of Anniston.

There are suburban towns for the families of the men employed in the shops; another for the factory people, and another where the homes of the colored people are gathered. All are laid out regularly and are made attractive.



The working classes are well paid and well cared for. They live in homes—not in hives. Their cottages are models of neatness and comfort. They are built of the best material, painted and plastered, and furnished with water, which comes gushing down from the reservoir that supplies the entire city. Attached to each cottage is a quarter of an acre, which is devoted to flowers and vegetables. The pride of the cottagers in beautifying their premises is remarkable, some of them displaying unusual taste and skill. One who has never seen a crowded manufacturing town in the North or in England cannot appreciate the comforts of the Anniston mechanics. Compare these pretty cottages, with their ventilation, their vine-covered porches and their blooming gardens, with one of those enormous tenements where the men, women and children are packed into narrow rooms, shut out from the light and the breeze, and shut in with discomfort and disease. The difference can be read in the appearance of the people who are placed in these contrasted conditions. The pale, pathetic faces, with their weary, timid look, so often seen in great manufactories, are unknown in this place, where air and exercise, clean houses, pure water and wholesome food are afforded to all.

Rents are very light. Four-room cottages are only \$7 a month, and six-room cottages only \$10.

The city is surrounded by some of the richest counties in the State. The fertile lands and the needs of the growing population of the town offer inducements to the farmer and truck raiser. The surrounding country offers rare attractions to the sportsman, the mountains and forests abounding in game.

#### AS A RESORT.

The numerous attractions that give to Anniston its charm as a home also make it a delightful place of resort for those seeking health or pleasure. The climate, for its mild equability, is unsurpassed. The heavily timbered mountains, the extensive pine forests beyond, the great elevation above the sea, the cool days and cool nights in summer, the mild and even temperature of winter, the entire absence of those conditions that breed mosquitoes and miasma, (epidemic diseases being unknown,) the beautifully soddied fields as a result of 10 years' persistent cultivation of the grasses, the thousands of water-oak shade trees, the beautiful drives, the springs of cool, refreshing freestone water coming from the base of the hills, combine to perfect in Anniston the ideal summer and winter resort. And it is for this purpose that the Anniston Inn, described above, was built and furnished in such magnificent style. Persons going to Florida in the fall or returning North in the spring will find this Inn a most entrancing place for a short sojourn. The stop here will break the fatigue of a long ride. The railroads will give travelers every facility for stopping over as long as they may desire, and will protect them in their through-rate tickets.

Anniston is destined to a great future. Its healthy and beautiful location, splendid climate, enormous mineral wealth and rich tributary agricultural country give it such material advantages that it will continue to increase in population and wealth much more rapidly than in the past.

You have here a town complete in all its appointments, without a dollar of floating or bonded debt, and protected by a provision embodied in the town charter that no tax of more than one-half of 1 per cent. shall be assessed for municipal purposes.

There is no other place in the Southern States more healthy, or more beautifully situated; none where the air is purer, the water clearer, and where there are so many pleasant inducements to the full enjoyment of these luxuries of life, as in Anniston.

## MINING NOTES.

By T. K. BRUNER, Salisbury, N. C.

### THE GOLD HILL MINES (LIMITED).

At a meeting recently held in the city of London of the shareholders of the Gold Hill Mines (Limited) resolutions for the voluntary liquidation of the company, with the view of its reconstruction, were passed. A new organization was made for the purpose of prosecuting the further development of the mines. The last operations at Gold Hill were of the most impractical character. The superintendent was an old and worn-out Brazilian miner, and demonstrated his entire ignorance of manipulating a complex sulphide ore with signal success. During his superintendence considerably more than a hundred thousand dollars were spent. The only practicable results of this expenditure were the forking of the water, sinking a new and clearing old shafts, and the construction of a mill-house, which was equipped with a twenty-stamp battery. An amalgamation extension was also built and furnished with revolving barrels and "saxe." A quarter of a mile of tramroad may be added to this list. The money set aside for equipment and development gave out. The superintendent returned to England a wealthier man, and the mine remained inactive until recently. The money necessary for holding the water in fork and for doing some prospecting was furnished by interested parties. Recently Mr. Manney, the native superintendent, reported the striking of a rich body of ore in the Williams drift, 500 feet from the surface. He has only a small force—eight or ten hands—at work, and they are prospecting the underground workings. This mine has been developed to the depth of 750 feet, with lateral tunnels and drifts 900 feet in length. It is a day's excursion to go through the mine. Gold Hill was discovered in 1842, and has been worked with more or less vigor since. The entire output is estimated at between three and four millions of dollars. With this record, it is a pleasure to announce that this famous old property is to be active again. Intelligent and honest management alone is needed to make it either productive or to save money in abandoning it before the exchequer is exhausted. The ore is a heavy sulphide, carrying a small percentage of copper and bismuth, and is refractory.

### NEW DISCOVERY IN RANDOLPH COUNTY.

Mr. Thomas Henley has made a new discovery of ore on the Betty McGee property, rich in gold. He is much elated over the prospect.

### WININGHAM MINE.

The new parties, Englishmen, are pushing work at the Winingham mine, in Randolph county. The ore improves as the development advances. They are now engaged with the work of putting up stamp mill.

A number of expert prospectors are engaged in the search of new metalliferous veins in Randolph county, and favorable results are expected from their work.

### IN MECKLENBURG COUNTY.

the Frazier, St. Catherine and Rudisil are worked, as usual. The Henderson mine has recently been reopened and prospected again by Mr. H. N. Clark, and it is reported that the appearance of the body of ore is satisfactory. The property has long been considered by those competent to judge as being worthy of vigorous and continued work.

### REED MINE.

The old and famous Reed mine, in Cabarus county, is again at work, and it is stated on reliable authority that a good body of ore has been found.

### VEIN MOUNTAIN MINE.

Superintendent Gaden reports that the new mill is ready to go into operation on Vein Mountain, in McDowell county. This property, and the Huntsville property, ad-

joining, embraces some eight thousand acres of land. They are being worked for both placer and vein gold.

### IN SOUTH CAROLINA.

There is but little change in the work since last reported. The Haile increased its work some in November. The Brewer mine remains unchanged.

### IN GEORGIA.

The larger mines, the Ivey excepted, are doing full work, with satisfactory returns.

### NEW HOOVER HILL.

The returns from Hoover Hill, as reported to the company at London, for the month of October are as follows: "Mill, 20 stamps, 24 days, crushed 792 tons of ore, yielding 209.47 ozs. of gold"—worth about \$4,000. This property still holds the lead in Randolph county.

## Notes from Virginia and West Virginia.

The recent visit of leading New England railway men and other Northern gentlemen to the Flat-Top coal mines of the Southwest Virginia Improvement Company at Pocahontas, Va., and those of the Bluestone Coal Company near Bramwell, W. Va., and to the Lambert Point coal piers, etc., of the Norfolk & Western Railroad, on the great harbor of Hampton Roads, near Norfolk, Va., has given opportunity for many pleasant comments and anticipations by the Virginia press. There are few, if any, American coals now in use for steam purposes that are by several per cent. equal in intrinsic value to those now known in the markets as Flat-Top and New river semi-bituminous coals as has been demonstrated by tests of the United States Navy Department, those of numerous railway and steamship companies, and those of large numbers of persons and firms that use steam coals. All these commend these coals because of the high percentages of fixed carbon (the heat producing element), and the low percentages of volatile matter, ash and sulphur, that all of them carry. They find that, ton for ton, they will do more work, and do better work, than any other coals. When questioned about their preference for these coals, these consumers pithily reply: "What else do we want coals for?"

Now that it is pretty well settled that a portion of the Cripple Creek branch of the Norfolk & Western Railroad will soon be taken in hand and completed to some of the furnaces that abound in the region—it will penetrate and so open a new market for coke—it is reported that a new coke company is being organized to erect a plant of coke ovens (probably beehives at first) on the lands of the Bluestone Coal Company, in the Flat-Top region, using the slack coal of the collieries now in operation there in coke making. This new company will also find a market for part of its output at the Gem furnace of the Shenandoah Iron Company, at Milnes Station, of the Shenandoah Valley Railroad.

Recent investigations in the Flat-Top and Trans-Flat-Top coal field, in Wyoming county, W. Va., prove that the noted "Nuttall" or upper bed of the lower-measure coals on New river, there underlies a considerable area, and that it is in an exceptionally good condition for mining, and in thickness. This is an important discovery for the Flat-Top region, since, although all the beds of these lower or No. XII coal measures yield superior steam and coking semi-bituminous coals, this "Nuttall" or upper bed (the one used by the Longdale Iron Company for coke at Sewell) is considered by blast furnace men to have a prerogative of excellence.

There is now a prospect that the great "Swan" estates—big tracts of coal, timber, etc., lands in Logan and adjoining counties, W. Va., on the waters of Coal, Guyandot and Chaterawha (Big Sandy) rivers, will soon be taken charge of by a wealthy company of

Englishmen and Scotchmen, who will extend railways to them and develop their rich resources of coal, timber, etc. Mr. Robert Randall, the trustee of the "Swan" estate, is now in negotiation with these foreign capitalists, whose engineer has visited the lands and reported favorably on their resources and value. The Hon. Sam. Randall also has a considerable interest in the "Swan" lands.—Exchange.

## Out of Work.

Free traders aver that there are a million men out of work; that protection has so stimulated manufacture as to produce excess of production. They claim that there are too many workers, and that overproduction results. What is their remedy? It is to admit free of duty the goods of all Europe, instead of making them here; it is to employ the poor foreigner, famishing for a crust, in preference to furnishing our own citizens the means of subsistence.

If grain is cheap, because so much is grown, it is proposed to make it cheaper by sending the operatives of closed factories to the wheat fields. If Germany has shut out our pork products, and the European markets have declined two million American hogs per annum, it is proposed to increase the purchases of Germany and France fifty millions or so. It would be a coal of goodly size to heap upon the heads of the enemies of our trade. Instead of procuring in Ontario a seventh of the country's consumption of barley, it is proposed to take half or all, if they will only sell it cheaper, as they can when the duty is taken off, with a few hours' shipment to Rochester on one side or to Detroit on the other. We can buy all our rice abroad, too, for the population of the sea islands of the Carolinas and Georgia can live on fish and sweet potatoes. By abolishing the duty on sugar the bayou lands of Louisiana may be turned into cotton plantations, which will make cotton cheaper, and give greater profits to the foreign manufacturers.

By reducing the number of industries we can acquire great skill and facility in those that remain, so that immense results will follow in production. Yet a plain citizen, with no knowledge of political economy, but possessing a grain of common sense, is unable to see how overproduction of grain or cotton can cure a glut, how the money is to be got with which to buy sugar and rice and barley in other countries, and where the labor of the home operative, displaced by foreign labor, can be profitably employed. The free-trade argument of the forum and the newspaper is a bundle of absurdities and inconsistencies, of contradictions, false logic, and falsehood, bare and unvarnished.

If remission of duties will let in foreign goods, it will shut out domestic manufacture; if manufacture is repressed, laborers are thrown out of employment, and go into competition with agriculture; and if agriculture is crowded, prices go down, and the demand for rural products stagnates. Then foreign trade declines, for want of means to pay for imports, enterprise slackens, wealth disappears, and civilization decays. This is the political economy of common sense.—N. Y. Telegraph.

GALVESTON, Texas, has passed an ordinance which requires that "each and every building of any size or kind hereafter erected within the city limits of Galveston shall have roofs constructed of either slate, tin, iron, prepared distilled asphaltum, felt and gravel or shell, or other fire-proof material to be approved by the chief engineer of the fire department." This is a wise move that might, with profit, be followed by other Southern cities.

*If you wish to keep posted on the progress of the South, read the MANUFACTURERS' RECORD. Price \$3.00 a year.*



# CONSTRUCTION DEPARTMENT.

**WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.**

## ALABAMA.

The mineral lands near Dudiey, Ala., comprising about 40,000 acres, and owned by the Southern Mining & Transportation Co., have been bought by P. H. Aldrich, of the Cahaba Coal Mining Co.

Gerrish & Woodard, Talladega, Ala., will, it is stated, erect a new stamp at their gold mine.

The Smith Sons' Gin and Foundry Co. is the name of the company reported last week as organized in Birmingham, Ala., by A. W. Smith, D. F. Smith, J. W. Gloss and others, to manufacture gin, cotton compress, &c. Capital stock \$100,000.

## FLORIDA.

The Palatka Milling Co., capital stock \$30,000, has been incorporated at Palatka, Fla., by Charles A. Boardman as president, A. Strausz and T. A. Darby, to manufacture lumber.

Richard McLaughlin, J. N. C. Stockton, John Westcott, R. J. Adams and P. Kissam have incorporated the St. Augustine & Palatka Railroad Co., to build a road from the St. Johns river to Palatka, Fla.

An ice company, with capital stock of \$20,000, has been formed at Palatka, Fla.

J. A. Cloud, previously reported as negotiating for a site in Jacksonville, Fla., on which to establish electric light works, has purchased the necessary machinery for such works.

C. Peters and E. E. Davis have established the Jacksonville Soap & Fertilizer Works, and have erected their factory three miles from Jacksonville, Fla.

John F. Dunn, J. M. Blair and M. D. Burnet of Ocala, Fla.; G. W. Morse and John C. Holman of Boston, Mass.; J. L. Chamberlain of Brunswick, Me., and W. W. Peniston of Philadelphia, have organized in Florida the Homosassa Railroad Company, capital stock \$100,000 to build a railroad from Homosassa to Brooksville, and the Homosassa, Ocala & Palatka Railroad Company, capital stock \$500,000.

D. W. Crosby, F. H. Crosby and A. H. Frey have formed in Florida the Florida Fruit & Phosphate Co., to cultivate the citrus fruits and mine and manufacture fertilizers, and will build a railroad 200 miles long, to be known as the Drayton Island & Gulf Railroad. Capital stock is \$150,000.

Davis & Farnum, Waltham, Mass., have received the contract for erecting a gas plant for the Palatka Gas Light and Fuel Co., Palatka, Fla., reported last week as having been let.

## GEORGIA.

The factory reported last week as to be started in Ringgold, Ga., to manufacture chairs, dishes, baskets, &c., will be started by Whitsitt & Benjamin.

E. M. Walsh & Co. are building an ice factory at Columbus, Ga., with daily capacity of 5 tons.

Clinton F. Brockett, Martin F. Amorous and S. Rosenthal will incorporate at Atlanta, Ga., the Delectalave Company, capital stock \$15,000, to manufacture medicines.

Oscar Gray, Haralson, Ga., has purchased engine and machinery for a saw mill, which he will put in operation.

## KENTUCKY.

Jungclaus & Schumacher, of Indianapolis, Ind., will erect in Louisville, Ky., a \$5,500 building, to be used as a dyeing house.

George Wiedemann, Newport, Ky., has completed his brewery at the cost of about \$50,000.

Charles W. Gheens, Edwin G. Hall, H. H. Haywood, Isaac Cromie, Samuel Barr and others have incorporated at Louisville, Ky., the Tower Mountain Gold & Silver Mining Co. Capital is not to exceed \$1,000,000.

Mr. Fisher, of Sandusky, Ohio, has purchased 1,200 acres of timber land at Grayson, Ky., and is erecting a saw and stave mill.

Improvements, costing about \$5,000, have been made at the distillery of John B. Thompson, Paris, Ky.

A. J. Turpin, Louisville, Ky., will erect a tobacco factory on Tenth street, two stories, 48x90 feet.

Wm. J. Beanners & Sons are building an extensive planing mill at Ford, Ky.

## LOUISIANA.

The Louisiana Sulphur Mining Company, of New Orleans, propose to spend a considerable amount, reported at \$100,000, in attempting to develop a sulphur mine in Louisiana.

J. J. Stockwell, Shreveport, La., has added machinery to his handle factory to manufacture boxes.

## MARYLAND.

The contract for erecting a school building in Baltimore, previously reported, has been let to G. H. Morrow & Co., at \$16,950.

Ewing's flour mill at Colora, Md., has recently been refitted with roller process machinery.

The Thomas Mining Co., have determined to develop their coal property near Frostburg, Md.

Mr. Frost will erect a saw mill at Popular Landing, near Annapolis, Md.

The Old Town Fire Insurance Co., Baltimore, will erect a three story building on Gay street.

## MISSISSIPPI.

James A. Gray's steam mill, at Gray's Mills, Miss., recently reported as burned, has been replaced by a temporary structure.

Little & Hand, Handsboro, Miss., are erecting a new saw mill.

The contract for constructing the Natchez, Red River & Texas Railroad, from Vidalia, La., to Trinity, Miss., has been let to George Arnold & Co., of Memphis, Tenn. Work will begin at once, and is to be finished by April, 1886.

## NORTH CAROLINA.

The Wilmington Gas Light Co., Wilmington, N. C., are making alterations at their works to manufacture gas from coal.

The Piedmont Wagon Co., Hickory, N. C., have purchased a new 50-horse-power boiler and engine.

Avery & Erwin, of Morganton, N. C., previously reported as proposing to invest \$30,000 to \$40,000 in a furniture factory at Asheville, N. C., have purchased a site of two acres, on which they will erect a large factory. Some of the machinery has been purchased.

Schiff & Bro., Charlotte, N. C., will rebuild their tannery, reported in this issue as burned; loss \$5,000.

It is reported that parties from New York and several citizens of High Point, N. C., will engage in the manufacture of tobacco at that place.

The Rocky Mount Mills, Rocky Mount, N. C., have been refitted with new machinery.

The saw mill of Dennis Simmons, Jamesville, N. C., reported last summer as burned, will be rebuilt.

The Naomi Falls Manufacturing Company, Randleman, N. C., will put in 48 new looms.

Forsyth county, N. C., will build a new jail.

A Pennsylvania party has purchased timber lands in Swain county, N. C., and will soon erect a saw mill on the Nantahala river.

P. V. Clark, of Bath, N. Y., has purchased the Broad Creek saw mills at Sladesville, N. C.

P. Knickerbocker & Co. are erecting a corn, saw, planing and shingle mill at Swan Quarter, N. C.

## SOUTH CAROLINA.

Bills have been introduced in the South Carolina legislature to incorporate the Greenwood, Abbeville & Elberton Railroad Company, capital stock \$1,000,000, with F. F. Riley, C. A. C. Walker, J. C. Maxwell, S. P. Boozer, B. Reynolds and others as incorporators; the Augusta & Abbeville Railroad, capital stock \$50,000, with D. A. P. Jordon, L. W. White, J. F. Lyon, W. A. Templeton, F. L. Morrow and others as incorporators; the Savannah Valley & Elberton Railroad, capital stock \$50,000, with W. W. Humphreys, B. F. Whittaker, J. N. Brown, E. M. Rucker and others as incorporators; the Bennettsville & Gibson Railroad, capital stock \$100,000, with F. B. Gibson, W. B. Adams, Simeon Gibson, H. C. Newton and others as incorporators; the Anderson & Greenville Railroad, capital stock \$500,000, with W. W. Humphreys, B. F. Whitner, S. Bleckley, J. N. Brown and others as incorporators; the Eastern South Carolina Railroad Company; the Cheraw & Camden Short Line Railroad Company; the Chadbourn & Conway Railroad; the Wilmington, Chadbourn & Conway Railroad Company; the Newberry & Laurens Railroad and the Troy Cotton Seed Oil Co.

W. H. Burdette has erected a small saw mill at Clifton, S. C.

R. C. Barkley, S. J. Pregall, C. H. Simon-ton, R. S. Long and others will incorporate the King Street and Cross Town Railway of Charleston, S. C. Capital stock to be \$50,000.

## TENNESSEE.

C. Powell and others of Knoxville, Tenn., will build the veneering factory at Johnson City, Tenn., previously reported. The site has been secured. It is stated that the machinery will cost nearly \$75,000.

Parties from New York have formed at Graysville, Tenn., the Fox Coal & Coke Co. to open and develop mines at that place. A railroad 1½ miles long will be built.

It is reported that J. P. Rawley will locate in Bristol, Tenn., and start a tobacco factory.

The Chattanooga Chair Manufacturing Company, Chattanooga, Tenn., have increased their capital stock, and will erect another factory building.

Willard Blue is president; John M. Cantrel, vice-president and Andrew Blue, secretary and treasurer of the Gallatin Chair Factory, Gallatin, Tenn., reported last week as organized. The capital stock is \$4,000.

Moss & Jernigan have erected a steam saw mill at White House, Tenn.

## TEXAS.

A stock company has built at Mossville, Texas, a corn and flouring mill and gin at cost of \$4,500.

The capacity of the mill of the Texas Mill & Elevator Co., Corsicana, Texas, will be increased from 250 barrels per day to 500. An elevator will also be built.

Mr. Gilliland is erecting a mill and gin at Burns, Texas.

The company previously reported as to be incorporated at Albany, Tex., to build a mill and gin, has been incorporated as the Albany Milling Company, capital stock \$25,000. They will erect a planing mill.

The Montague & Northwest Railroad Co., capital stock \$100,000, has been chartered in Texas. The road will extend from Gainesville to Brushy Mount.

Two new presses are being put in the Brenham Oil Mill, Brenham, Texas.

M. S. Fisher, Bonham, Texas, is building a new flour mill.

## VIRGINIA.

P. H. Rorer has erected two corn mills in the Kefauver factory at Roanoke, Va.

Repairs are being made at the works of the Norfolk Gas Company, Norfolk, Va.

Proposals will be received until January 4, by E. T. D. Myers, superintendent Richmond, Fredericksburg & Potomac Railroad Company, for erecting a two-story brick passenger building, 90x140 feet, at corner of Seventh and Canal streets, Richmond, Va.

\$18,000 has been appropriated by the council of Norfolk, Va., to extend water supply.

T. C. Williams & Co., Richmond, Va., are building a large tobacco factory corner Seventh and Canal streets.

Bills have been introduced in the Virginia legislature to incorporate the Virginia Fuel & Gas Company; the Roanoke Valley & North Carolina Railroad, the Danbury & Parkersburg Railroad Company; the Chesapeake, Norfolk & Carolina Railroad Company, with John Callahan, R. C. Marshall, H. T. Wickham, John F. Dezendorf, Thomas Marshall and others as incorporators; the Suffolk Light & Water Company, and to allow Covington to issue and negotiate bonds for constructing water-works.

Z. T. Obenshain, Obenshain, Va., is putting some new machinery in his mill.

## WEST VIRGINIA.

The Newburgh Orrel Coal Co., office at 25 S. Gay street, Baltimore, contemplate building some new coke ovens at their mines at Newburgh, W. Va.

William Beckley, of Michigan, is erecting, twelve miles from Gauley Station, W. Va., a large band saw mill. A 40-horse-power engine will be used.

M. A. Cheney, H. M. Cheney, W. S. Hawkins, W. H. Carpenter, C. Carpenter and J. W. Roberts have incorporated at Kanawha Falls, W. Va., the Union Boom Co. Capital is not to exceed \$50,000.

## BURNED.

Thomas Lee's tobacco factory, at Horse Pasture, Va.

The steam saw and flooring mills of Jefferson & Stacks, near Federalsburg, Md.; loss \$6,000.

Schiff & Bro's steam tannery, at Charlotte, N. C.; loss \$5,000. Will rebuild.

## LOCKWOOD, GREENE & CO. MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I.

Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.



The Beaver Run Lumber Mills, Cross Roads, Ky., (P. O. Summersville). Loss about \$10,000.

The saw and planing mill and box factory of the Cumberland Lumber & Box Co., Nashville, Tenn.; loss \$25,000.

Gin of Hardie & Clark, Dodge, Texas. Loss \$1,500.

N. & A. F. Tift & Co's mills, machine shops and variety works at Albany, Ga. Loss \$12,000.

Saw mill of J. B. Welton in Greenville county, Va., wrecked by boiler explosion.

L. Beckom's ginnery near Fort Gaines, Ga.

The gin, sugar mill and grist mill of Mr. Morton, three miles from Quitman, Ga.

Gin and mill of Clark Lewis, in Noxubee county, Miss.

The steam sugar and grist mill of Theodore Thibodeaux, twelve miles from Opelousas, La.

The furniture factory of Schaad & Rotach, loss \$3,000; and the saddle-tree and box factory of J. H. Flenniken, at Knoxville, Tenn. The former will rebuild.

The Logan Woolen Mills at Adairsville, Ky., owned by Watson, Ivey & Co.; loss \$20,000.

The ginnery of J. T. Thornton, Calhoun, Ga.; loss \$2,000.

### Large Planing Mill.

BALTIMORE, MD., Dec. 3d, 1885.  
*Editor Manufacturers' Record:*

We expect to build a planing mill on Boston street, foot of Chesapeake street, Canton. Our capacity is to be about 100,000 feet of dressed flooring daily.

E. L. TUNIS & Co.

### \$100,000 Gin & Foundry Co.

BIRMINGHAM, ALA., Dec. 3d, 1885.  
*Editor Manufacturers' Record:*

The Smith Sons' Gin & Foundry Co. was organized a few days ago in this city with a capital stock of \$100,000—Arthur W. Smith as president, and Dan'l Smith as secretary and treasurer. The company will go to work at once erecting buildings, and expect to be ready to manufacture gins in 60 or 90 days.

J. W. SLOSS.

### Will Erect Machinery.

CINCINNATI, O., Dec. 6, 1885.  
*Editor Manufacturers' Record:*

We have purchased property at Greenup for manufactory; expect to plant machinery; have such machinery in prospect of purchase as will answer our purpose, and will not need any more.

B. T. PRATT & Co.

### New Bridge Works.

BIRMINGHAM, ALA., Dec. 2, 1885.  
*Editor Manufacturers' Record:*

The Southern Bridge Company has been incorporated, capital stock \$25,000. Lot has been purchased and paid for, and work will be commenced at once. Hope to be in operation by February 1, 1886. Wm. J. Cameron, president; W. L. Schideler, superintendent; and myself secretary and treasurer.

E. W. LINN.

CLINTON, KY., Nov. 29, 1885.  
*Editor Manufacturers' Record:*

I have purchased a chair factory at Clinton, Ky., and perhaps will want some machinery soon.

W. M. WALLACE.

CHAMBERSVILLE, ARK., Dec. 7, 1885.  
*Editor Manufacturers' Record:*

The net loss of our woolen mill is \$30,000, no insurance. We want to rebuild soon.

ACRUMAN & POOL.

### Five-ton Ice Factory.

COLUMBUS, GA., Dec. 7, 1885.

*Editor Manufacturers' Record:*

E. M. Walsh & Co., in copartnership with Mr. E. C. Sauls, are building a factory having a present capacity of five tons, with the probability of raising it to eight tons, absorption machines. Mr. Sauls is a practical machinist and well-trained in the manufacture of ice machines, several of which he has erected in various parts of the country. He helped to erect, and had charge of, absorption machine at Exposition, New Orleans, Fort Worth, Texas, and other places. Our bottling works have been in operation over twelve months, the only addition being a Puffer machine for the manufacture of mineral waters. All our machines are run by steam—including our bottle washer. This department is in connection with liquor department, under one license, and is distinct from ice factory.

E. M. WALSH & Co.

JACKSON, MISS., Dec. 2, 1885.

*Editor Manufacturers' Record:*

There is, as yet, nothing definite as to a cotton factory being established here. The project is being favorably discussed in a general way. The recent erection of a mammoth compress, the successful organization of a building and loan association, the fact that railroads come here from six directions, that the city is located on Pearl river, is the State capital and surrounded by a splendid country, make it a superior point for the investment of capital in manufacturing.

J. S. POWER.

### Dish and Basket Factory.

RINGGOLD, GA., Dec. 4, 1885.

*Editor Manufacturers' Record:*

There will be, in a few days, a dish and basket factory in operation by Whitsitt & Benjamin. I understand there is to be a foundry here also in the near future.

LAURA WHITSITT.

### Will Rebuild.

KNOXVILLE, TENN., Dec. 6, 1885.

*Editor Manufacturers' Record:*

Our factory is not entirely burnt; we can have some of the machines repaired. The machinery was bought from the Egan Co., Cincinnati, Ohio, last June. It is our intention to have them repaired.

SCHAAD & ROTACH.

### Ice Factory and Gas Company.

PALATKA, FLA., Dec. 4, 1885.

*Editor Manufacturers' Record:*

An ice company has been formed and is now at work making ten tons per day. Paid up capital of \$20,000. Gas company also formed with capital of \$30,000, which will begin work January 1, 1886.

B. HARRISON.

THE Norfolk Virginian, to celebrate its twentieth anniversary, issued a special number, in which elaborate statistics of the growth of Norfolk and Portsmouth were given. The Virginian has a firm faith in Norfolk's future, and is always doing something to emphasize this, and at the same time to let the world know that Norfolk is still moving steadily on in her prosperity.

M. S. FISHER, Bonham, Texas, and Wright, Denio & Steel, Loveland, Col., are building new flour mills, to be run by Westinghouse engines, 75 horse-power each.

### A Blow at Our Growing Industries.

In connection with the waterways agitation in Alabama a leading citizen of that State has warned the people, in a card published in the Birmingham Age, that there may be matters of vital importance to Southern industrial interests very necessary to consider conjointly with any project to secure the improvement of local rivers at government expense. The card in question was called forth by the current belief that a large and forceful effort is to be made in Congress next winter, to place "raw materials," which, of course, would include coal and iron, upon the free list, and the point was made that if such a consummation as that were to be counted on, then the improvement of inland waterways, like the Tombigbee, Warrior and Coosa rivers, would be of small avail. Without any duty on coal and iron the writer suspected that the state of affairs which makes it easy to flood the Pennsylvania market with galley slave iron ore from Spain might occur in relation to gulf ports. As far as his remarks apply to the port of Mobile, the point most directly interested in the scheme of water transportation from the Alabama coal field, they are doubtless correct. By far the greater proportion of foreign vessels seeking that locality in quest of cotton or lumber do come in ballast. Before now foreign coals have not unfrequently formed the ballast, and, as the card states, have been offered gratis to whoever would pay the duty and the cost of unloading. If there were not any duty, then Mobile coal dealers might often be able to stock up with coals by paying the cost of unloading merely. Under such conditions it is not difficult to see that the questions of internal improvements and of raw materials on the free list may be more closely involved with each other than has generally appeared heretofore.

What effect legislation to admit raw materials duty free might have upon important industrial interests of the United States may be judged to some extent, perhaps, by what could concededly happen to the great ore producing regions of Lake Superior in consequence of such a "reform." American energy, skill, capital and labor, distributed over much territory and through many channels, have combined to make possible the extensive supply of native iron ores, which has principally constituted the "raw material" of the Pennsylvania and Ohio iron manufacturers. Abolition of duty on foreign iron ore, it is admitted, we believe, could bring into Philadelphia, Pittsburg, New York and other Eastern points an endless supply of equally workable ores from Spain and North Africa, which foreign free raw material could be laid down at furnaces considerably cheaper than like ores can be had from Lake Superior. Even with the present tariff, as previously noted in these columns, nearly 783,000 tons of this Mediterranean ore reached the East, and principally Pennsylvania, in a single year. In the light of such a fact the fear of the Lake Superior raw materialists, that the entire removal of the duty would ruin their business, does not seem so very unreasonable.

The Lake Superior miners and the carriers, and others dependent upon them, are Americans like our own miners, and their interests are entitled to fair consideration, which, let it be hoped, they will not be denied at Washington; and they have built up something in the way of a business that it might not be good public policy to legislate out of existence all of a sudden. From 1877 to 1882 the Lake Superior iron mines shipped 9,578,384 tons of ore, and altogether up to the time last mentioned an aggregate of 17,642,443 tons, having a market value of \$138,592,275. The capital employed in iron mining in the two districts of Marquette and Menominee amounted in 1882 to \$51,000,000, and 50,000 people live by the

industry. It was estimated that the investment of the various railways on account of this same ore business amounted to \$24,478,000, and the movement of the commodity in lake vessels was represented by a transportation capital of \$6,000,000 more. Thus we have an interest which three years ago covered an investment of over \$81,000,000, and involved the support of considerable communities, scattered over a large geographical area, threatened with extermination that the profits of the iron barons of Pennsylvania may be greater, and the chance a better one to prevent the growth of the Southern iron industry from interfering with their ancient monopoly. It is not at all impossible that the free raw material scheme will work! There are the Eastern manufacturers, who want protection for manufactured goods only, and free raw materials of course. Then there are the ultra free traders, who will gladly help the manufacturers to get free raw materials on general principles. Already the two elements named would present a strong front. They will look for many recruits from the ranks of those who have local improvements to be pinned on the river and harbor, or other appropriation bill, and who for lust of district fame may be not unwilling to trade a vote for "free raw materials," for the promise of a good big block of votes for their county streams. In a case like Alabama one can imagine how this would work. Suppose the delegation from that State should vote for free iron and coal, thereby giving the necessary majority for those "reforms," in return for a sufficient vote to pass the Alabama rivers improvement measure. The improvement of the Tombigbee, the Warrior and so on, would become useless, since the "reform" would supply Mobile with foreign coal cheaper than it could be flat-boated down the rivers to tidewater.

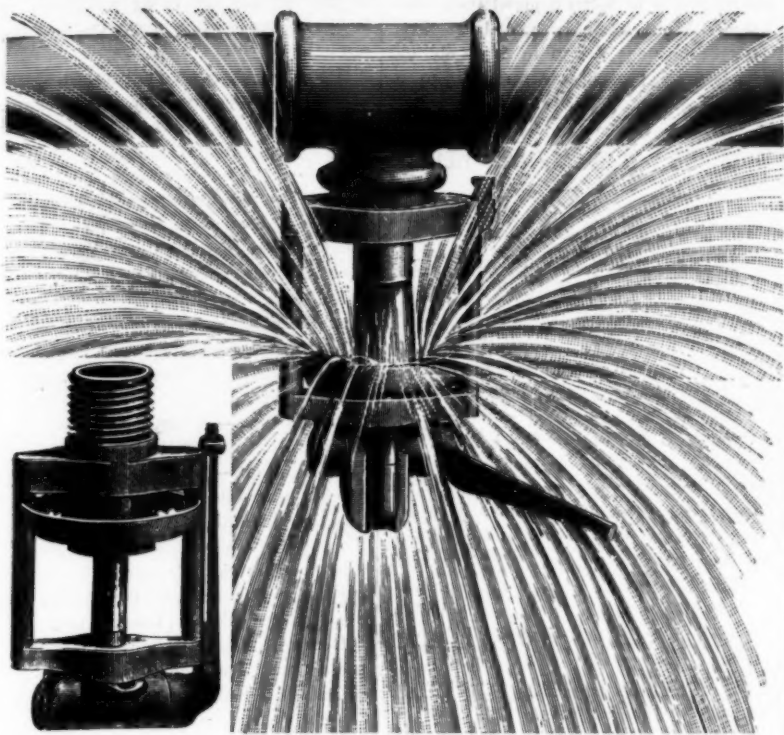
The coming session of Congress bids fair to be a season of anxiety for Southern industrial interests; but it will present a fine opportunity for Southern members to make a record for themselves. One of the great questions they will be called upon to consider will be, perhaps, "how far the millionaire manufacturers of the East should be allowed to enforce ample protection for their products and, at the same time, forbid the extension of a like measure to other people's." On their success in meeting such issues will greatly depend the law and the profits of our future industrial existence. —The Times-Democrat.

### Southern Harbor Improvements.

It should be the wisdom of Congress the coming winter to give all the encouragement possible to the committee that will wait upon it from the Savannah Convention, whose meeting so elaborately discussed and set forth the urgency of improving the harbors of the South on seaboard and gulf. It is a shame that the Southern ports have been discriminated against in the matter of appropriations for the improvement of their navigable waters. There is not a harbor from the Delaware around the coast and Gulf to the mouth of the Rio Grande that will admit a schooner but what is essential to the trade of the whole country and deserving of as much recognition from the Government, proportionally, as any other American harbor. The harbors of Wilmington, Charleston, Savannah, Fernandina, Pensacola, Mobile, Galveston, etc., are to the South what the harbors of New York, Boston and Portland are to the North, and should be as liberally dealt with by the Government. We have regarded the South as an indissoluble part of the United States, entitled to the same rights and privileges as the North and West; if so it should receive its share of benefit from the general fund. The Savannah Convention was held to memorialize Congress on behalf of Southern harbors, and we think their appeal will not be out of reason, but merit the consideration and favorable action of Congress.—N. Y. Marine Journal.



## WALWORTH Strong Sensitive Link Sprinkler.



THE WALWORTH STRONG SENSITIVE LINK SPRINKLER, for the extinguishment of fires, having for its most salient points

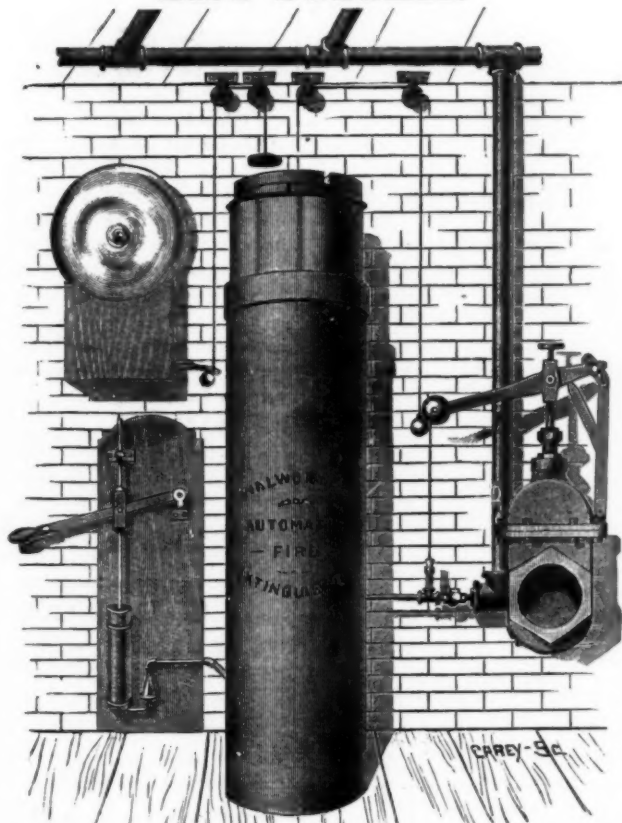
**STRENGTH, SIMPLICITY AND RELIABILITY,** has forced its way to the front solely because it has been proved to be the best Sprinkler made. No Sprinkler ever introduced has shown such good results. In no instance has it failed to act when needed, notwithstanding the fact that it has been severely tested in many instances.

*We give below the account of a remarkable fire:*

MESSRS. WALWORTH MANUFACTURING CO.:

GENTLEMEN—On Sunday evening fire was discovered in our engine room, and in five minutes had worked its way through a belt box to the fourth floor. For a few minutes it looked as if the place must go, but the automatic heads on each floor near the fire went off and quickly extinguished it without assistance from hose or anything else. Had there been sprinklers in the engine room, fire could not have got beyond it, and we will be pleased to have you put them in this room at your earliest convenience. After the fire was out we shut the water off at tanks, put on new rings at the eleven heads which had gone off, and with water on started in full next morning as though nothing unusual had taken place.

## WALWORTH Automatic FIRE Extinguisher. DRY SYSTEM.

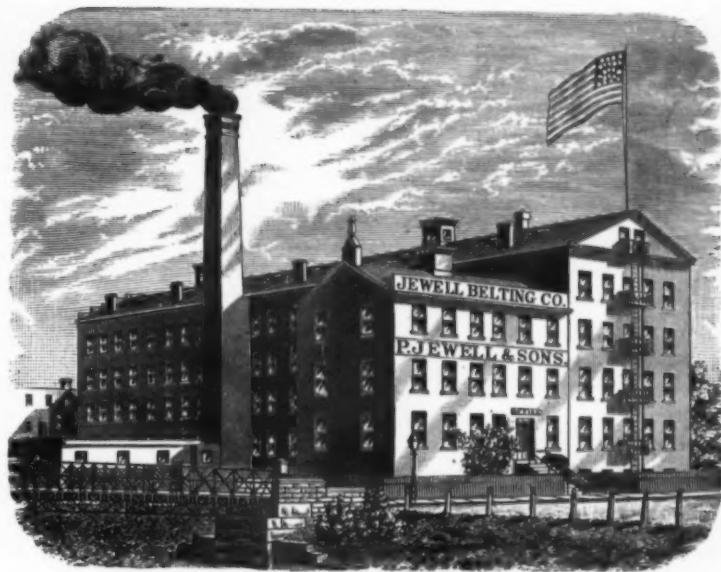


By this system the pipes are filled with compressed air under a pressure of one pound to the square inch. Attached to the pipes is an Airometer, the inner tank having a weight upon it of 100 pounds. This tank and weight is raised by the compressed air, and as soon as a Sprinkler is opened the pressure, being released, allows the tank and weight to fall, thus opening a valve and either starting the pump or releasing the water from tank or street mains. It is so arranged that an alarm will sound just before the valve is to be opened, notifying that there is a fire, or that more air must be pumped. The entire supply of air can be produced by a few strokes of the air pump. Manufactured by the

**Walworth Manufacturing Co.**  
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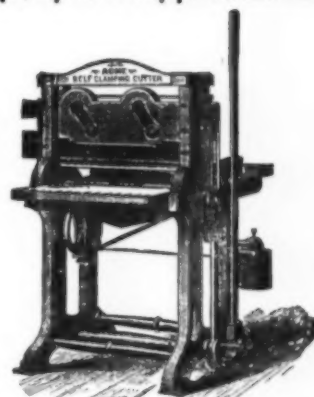
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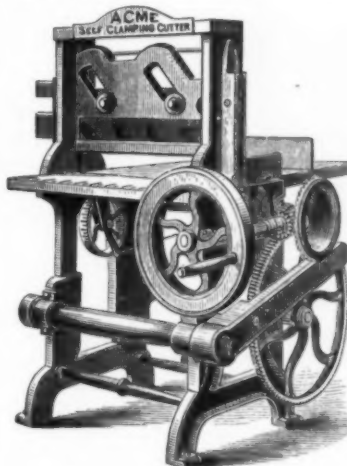
This line of cutters now enjoys the highest reputation for strength, power, durability, accuracy, simplicity, convenience and a superior principle of operation, and they are used by the leading printers, book binders, paper dealers, lithographers and paper manufacturers of the country. The essential features are

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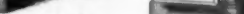
This cut shows the new Treadle Clamp recently applied to the Acme Cutters, by which the operator has the use of both hands while clamping the paper. A regular hand clamp may also be applied to any of these cutters if desired. Price of either style is \$75 extra.

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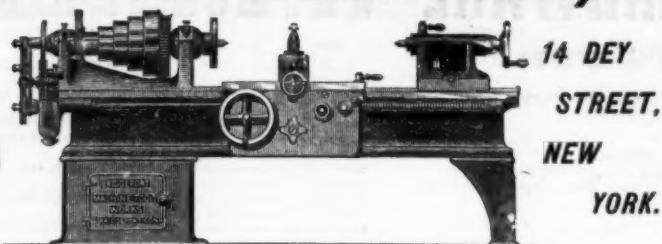
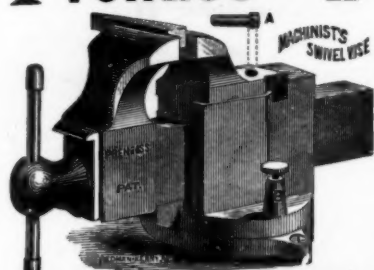
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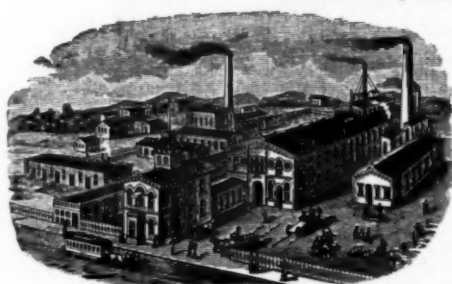
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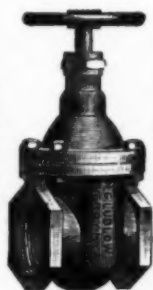
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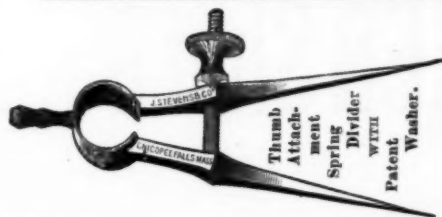


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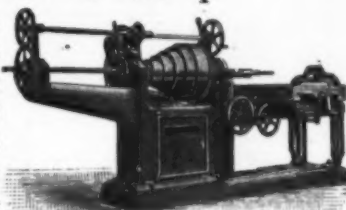
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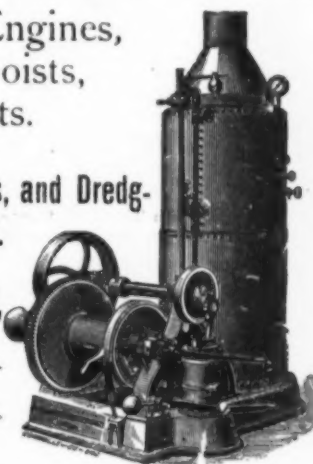
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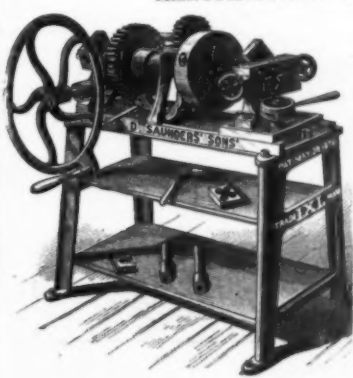
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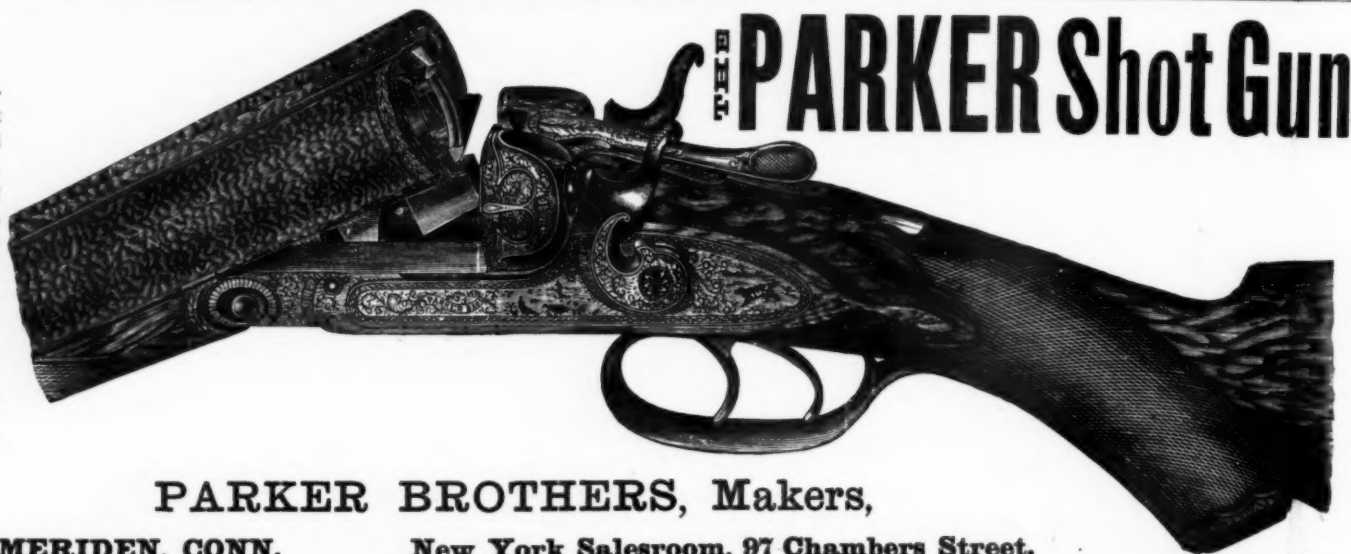
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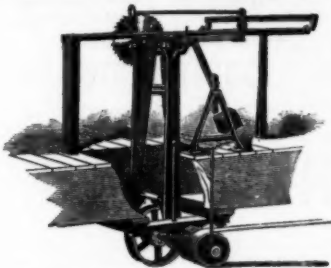
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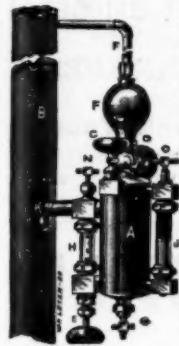
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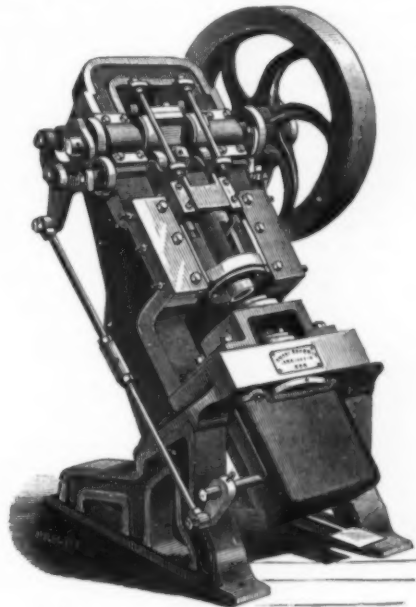
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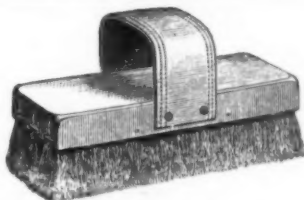
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The Holyoke Machine Company, of Worcester, Massachusetts, advertise in this issue their well-known Hercules Water Wheel. This wheel has many points of merit that strongly commend it to the attention of those who use water power. The most thorough tests have demonstrated its many good qualities. In Holyoke it is the standard water wheel, the aggregate horse power of the Hercules wheels in operation there being greater than that of all other wheels combined. These wheels are very popular in the South as well as in the North, having been in use for many years in a large number of Southern mills. There are four of the Hercules wheels now in operation in the big cotton mill of the Eagle & Phenix Manufacturing Co., Columbus, Ga., and Mr. John Hill, of that company, in writing, Feb. 25, 1885, to the Holyoke Machine Co., said: "Within the past four years I have ordered four 'Hercules' wheels all of which have given the purchasers entire satisfaction. Three of the wheels are on regular duty in the Eagle & Phenix Mills. The first wheel ordered did so well that a 'Hercules' wheel has been added each time a new wheel was wanted. In the Eagle & Phenix Mills I supervise twenty water wheels of six different styles. The 'Hercules' is by far the most durable and best made wheel in use here, and, in fact, I know of no wheel its equal mechanically. It is all that can be desired in economy of water. In fact, it is a strictly first-class wheel in every way, and the wheel to buy, use and depend upon."

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Railroad Shop Equipments, Mining Tools, &c.

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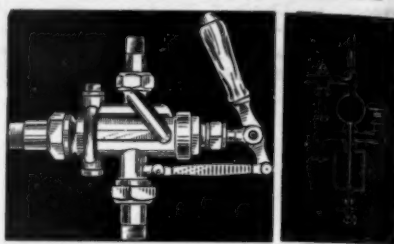
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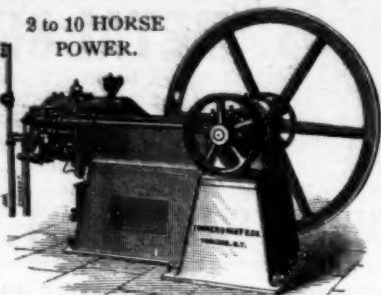
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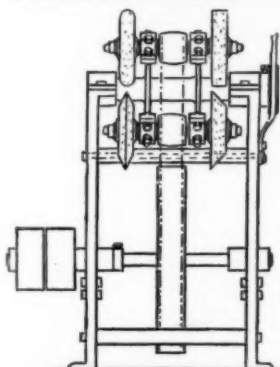


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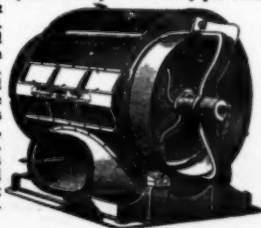
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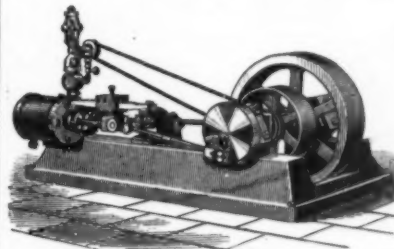
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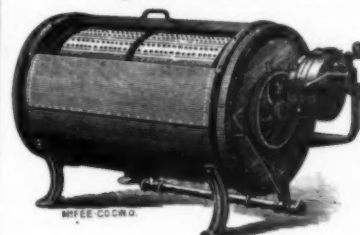
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This is to certify that I have made a careful examination of "Warner's Combined Purifier and Heater of Feed Water" in practical operation at the "Harris House" and "Post Building," in this city, and do not hesitate to pronounce it the *best* machine for the purpose ever invented. By its use the water goes into the boiler free from all impurities and heated to the boiling point under full boiler pressure, and as the result of the injection of pure water, the boiler is freed from scale and *kept clean*, while a large saving is made in fuel by the removal of the scale and heating the water to the boiling point *before* it enters the boiler. By the use of this machine the necessity of "shutting down" in order to blow out and clean the boiler is wholly obviated, as the impurities are all collected in the bottom of the machine, which can be blown out as many times a day as the engineer thinks proper without interfering with the workings of the boiler. I confidently commend this machine to all persons who own or use steam boilers, and am satisfied that its use will prolong the life of the boiler and make a handsome saving in the use of fuel.

Very respectfully,  
(Signed) JOHN H. WILKERSON,

Inspector of Steam Boilers for District of Columbia, 220 7th Street, S. E.

"HARRIS HOUSE," COR. PENNSYLVANIA AVENUE AND E STREET, N. W.

WASHINGTON, D. C., June 23, 1885.

This is to certify that one of "Warner's Purifiers and Heaters of Feed Water" has been in use on one of the boilers of the Harris House, in this city, for three months, and has proved a perfect success. The boiler upon which the machine was placed was at the time covered with a heavy scale composed of animal and vegetable matter, lime, &c., which, by the use of this machine, has been entirely removed, the boiler being now as clean as when it came from the boiler-maker. This has been entirely accomplished, without the use of chemicals, by the injection of pure water through the "Purifier and Heater." This machine injects the water into the boiler heated to the boiling point under full boiler pressure, and by this means, together with the removal of the scale, results in a large saving of fuel. It is also invaluable in the purification of the water for laundry purposes. The machine is self-acting, and prevents the necessity of "shutting down" in order to blow out the boiler, as the impurities are all concentrated in the bottom of the machine, and can be blown out through the machine as often during the day as the engineer may deem advisable without interfering with the working of the boiler. I am convinced that its use will prolong the life of all boilers upon which it may be placed, save a large percentage of fuel, decrease the danger of explosion, purify the water for all purposes, and give general satisfaction. I confidently commend it to all hotels using steam and to owners of steam boilers generally as a much needed improvement that will do the work claimed for it thoroughly.

(Signed) JOHN H. HARRIS, Proprietor of Harris House, Washington, D. C.

This is to certify that one of "Warner's Purifiers and Heaters of Feed Water" was placed upon the boiler of the Post Building about 60 days ago as a test. At that time the boiler was covered with a heavy scale of animal and vegetable matter, lime, &c., which it was impossible to prevent. By the use of this Purifier and Heater, which injects the water into the boiler free from all impurities and heated to the boiling point, the scale has been removed and the consumption of coal reduced. The machine works itself and is invaluable as a purifier of water to all branches of business requiring pure water, such as hotels, laundries, &c., and a much needed adjunct to all steam boilers, prolonging their life, decreasing the danger of explosion and effecting a large reduction in the consumption of fuel. I confidently commend Warner's Purifier and Heater to all owners of steam boilers, being confident that their interests will be subserved by its use.

(Signed) J. FRANK MCGUIRE, Superintendent and Engineer Post Building.

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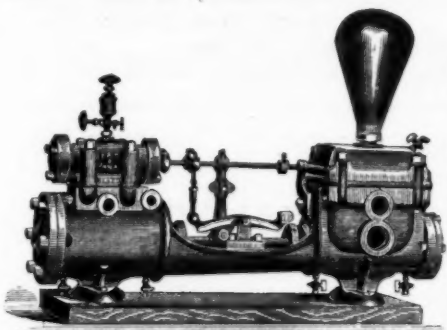
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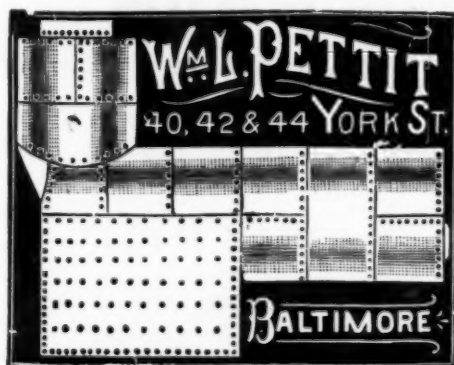
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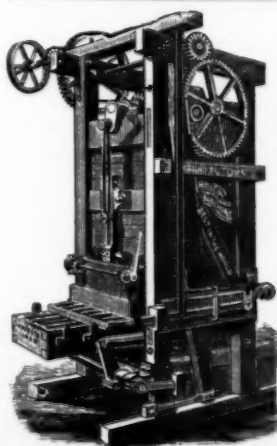


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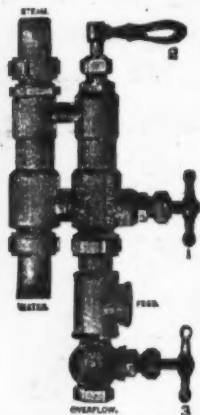
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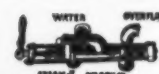
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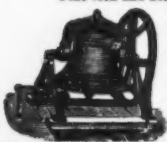


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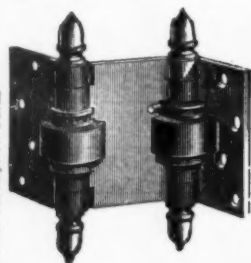
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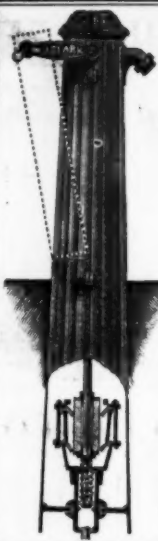
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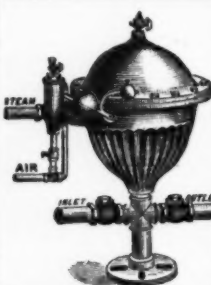
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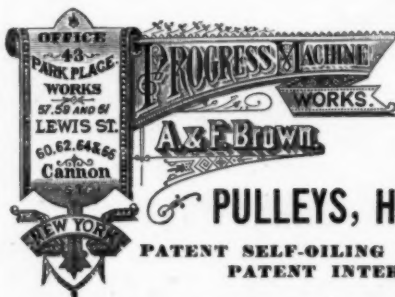
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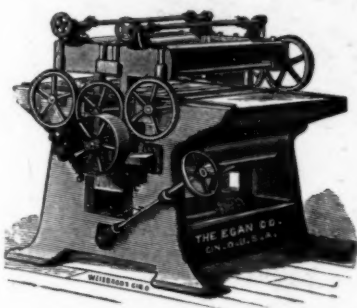
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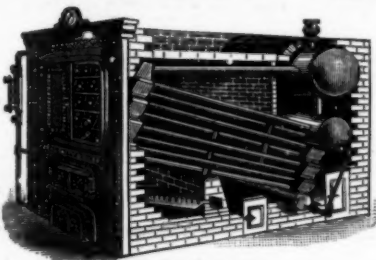
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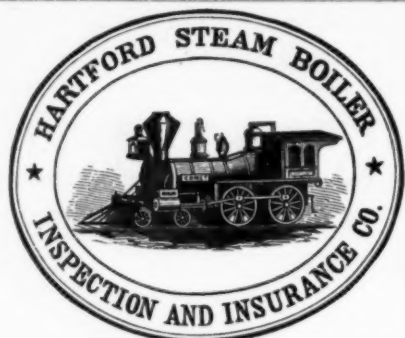
True to pattern, sound, solid, free from blow-holes, and of unequalled strength. Stronger and more durable than iron forgings in any position or for any service whatever. 40,000 CRANK SHAFTS and 30,000 GEAR WHEELS of this steel now running prove this. CRANK SHAFTS and GEARING specialties. STEEL CASTINGS of every description. Send for Circulars and Prices to

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Works, Chester, Pa.

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Covering all  
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ARISING FROM STEAM BOILER EXPLOSIONS.

The Business of the Company Includes All Kinds of Steam Boilers.

Full information concerning the plan of the Company's operations can be obtained at the  
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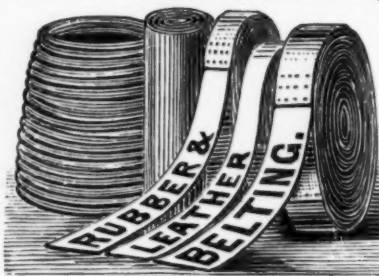
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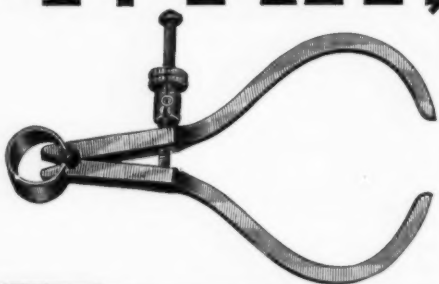
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FLOURING



MILLS.

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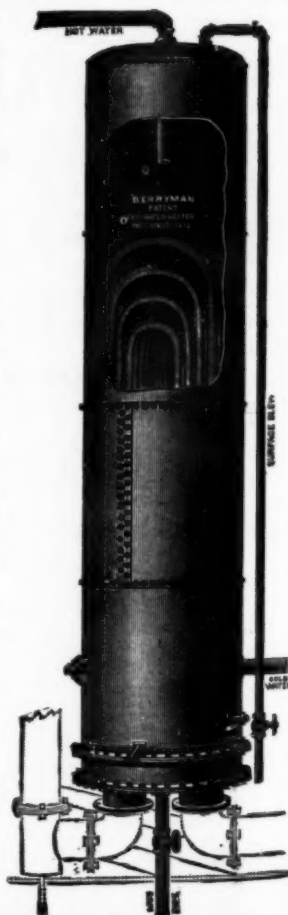
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Sole Proprietors & Manufacturers in the U. S.

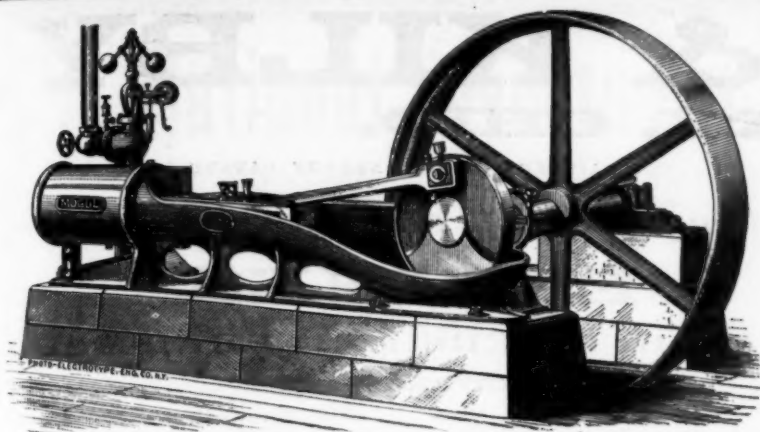
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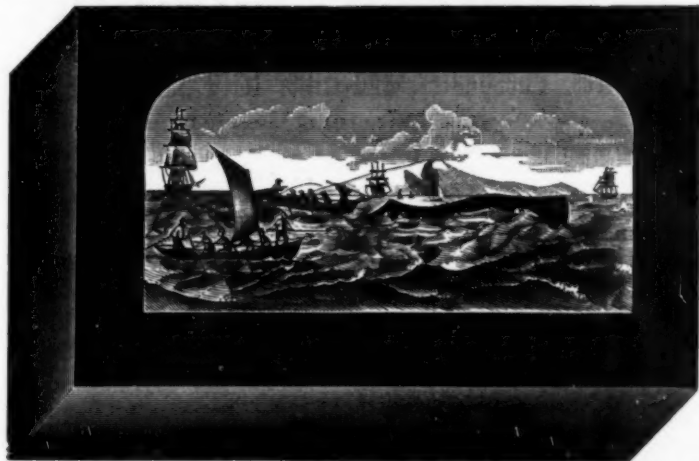
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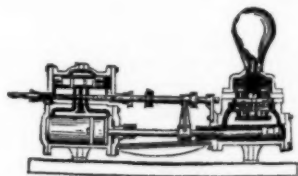
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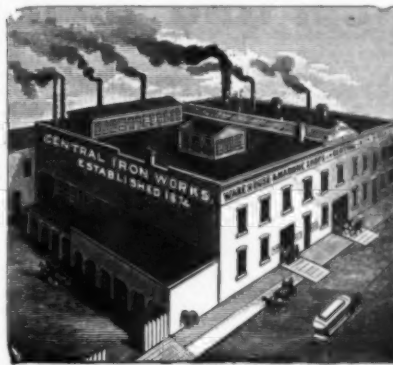
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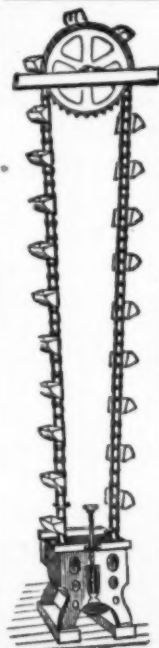
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Yours truly,  
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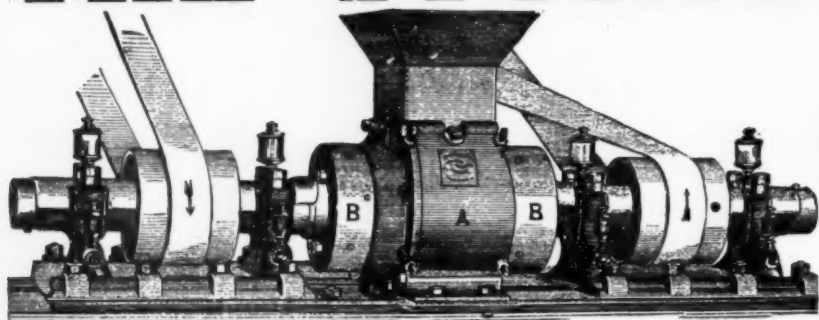
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## PULVERIZER COMBINED.

FOR GRINDING AND CRUSHING

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of this invention, as it is the first mill ever constructed where the rock is made to grind itself. The expense of wear and tear is 75 per cent. less than any machine ever invented. No expensive foundations. No skilled labor required. One mill equal to a 30-stamp battery and crushers combined, occupies space of 12 feet by 4 feet in width. These machines are in operation on a large scale. Every mill warranted to do all claimed for it. Send for catalogues of this wonderful machine, and full information.

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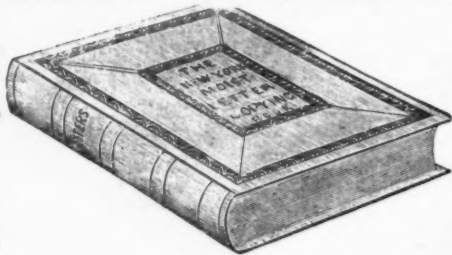
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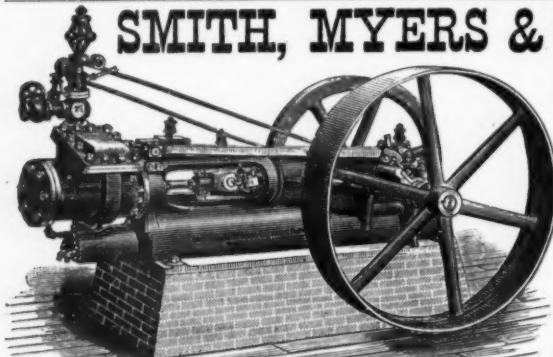
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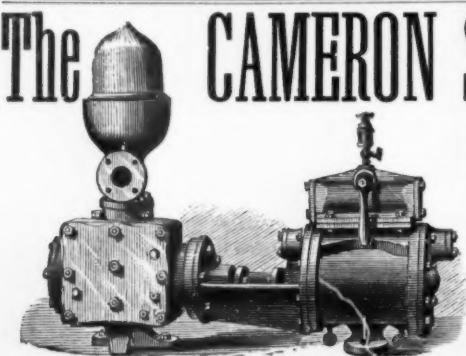
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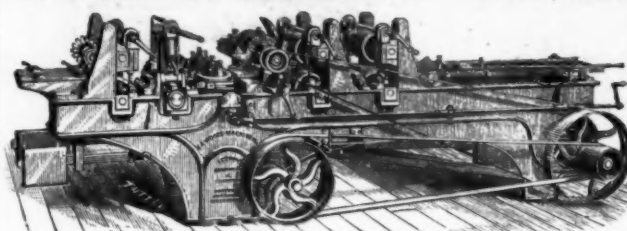
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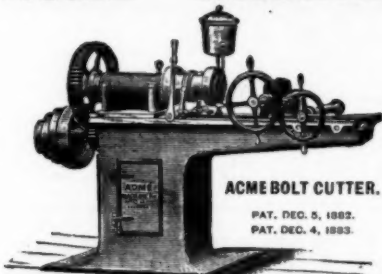
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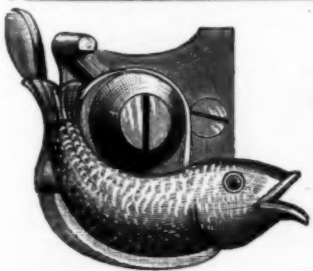
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PAT. DEC. 5, 1902.  
PAT. DEC. 4, 1903.

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THE SOUTHERN CULTIVATOR is the oldest and now the handsomest Agricultural Journal in the South. By recent purchases it combines "The Dixie Farmer," Atlanta, Ga.; "The Plantation," Montgomery, Ala.; "The Rural Sun," Nashville, Tenn.; "The Southern Farmers' Monthly," Savannah, Ga., and unites the patrons of these with its own large list of subscribers.

In club: THE SOUTHERN CULTIVATOR and "The Southern World," one year, both papers, \$1.75. Sample copies free.

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Sample Copies Free.

**JAS. P. HARRISON, Business Manager,**

Drawer 8.

**ATLANTA, GA.**



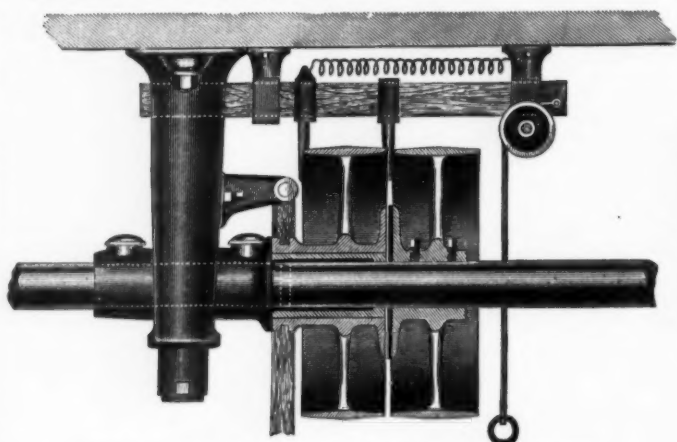
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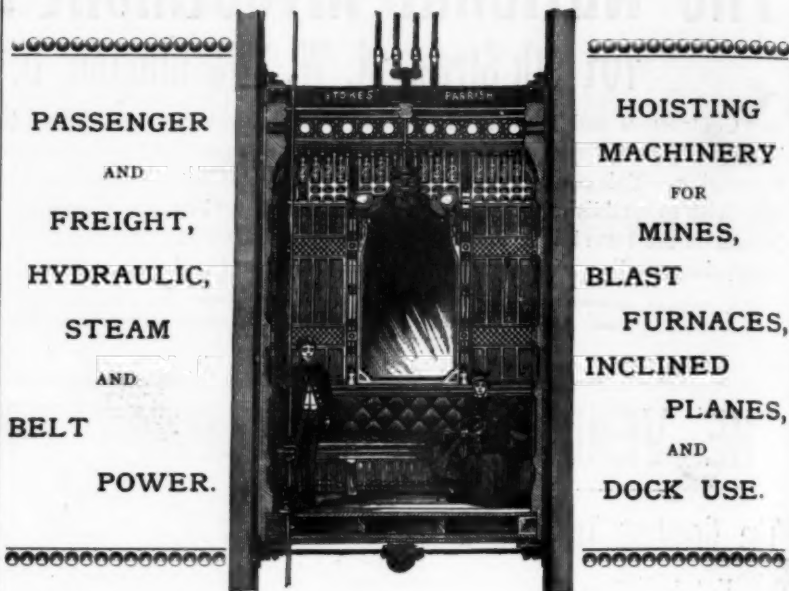
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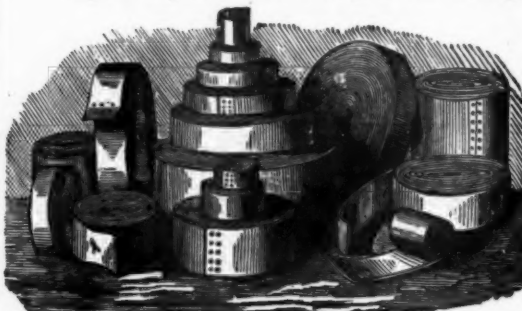
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